

## To interested engineering firms:

Hardwick Electric Department (HED) requests engineering firms with hydropower experience to offer their **statement of qualifications** to conduct a feasibility study of mitigation options. The study will consist of two separate components at the same hydropower facility for FEMA Public Assistance (PA) federal funding. The powerhouse building flooded in 2023. The penstocks were damaged in 2024. For compliance with local, state, and federal procurement HED will conduct a two-step qualifications-based procurement of A/E services. HED intends to rank order the highest qualified firms as step one. Step two in the RFQ process is fee negotiation.

If your firm is interested to assist HED on this project, please offer a statement of qualifications to provide continuing professional engineering services.

**BACKGROUND & NEEDS.** In Jul 2023, the circa 1920 **Pottersville (Wolcott) Dam hydropower building** housing the 800kW Kaplan vertical turbine generator flooded approximately 90 IN high that substantially damaged the facility. The pre-FIRM facility is in a Special Flood Hazard Area (SFHA). The 2023 flood damaged hydropower equipment are nearly repaired. The initial mitigation measure constructed a new mezzanine to elevate the power controls and electrical equipment. Currently, HED needs to Study options for mitigation of the building and turbine-generator equipment. HED with consultation from the State of Vermont Floodplain Coordinator would like to explore an engineering feasibility study to “**wet floodproofing**” the building and “**dry floodproofing**” the turbine-generator equipment. For purposes of the FEMA Public Assistance grant application, this **building/equipment mitigation study** needs to be tracked separately from the following **2024 damaged penstock study**. The FEMA PA 2023 project numbers are 726491 (building) and 736479 (turbine-generator equipment).

In Jul 2024, the **Wolcott Dam hydropower penstocks** were damaged by extensive flooding that for the second year overtopped the flood protection wall during a time when the 800kW hydropower plant was taken offline for the 2023 repairs of flood damaged Kaplan vertical turbine generator. The penstocks were void of water flow and show evidence the penstocks floated off their supporting saddles, dislodged, and are physically damaged because of the 2024 event. Both flooding events were declared federal disasters. This FEMA PA 2024 project number is 759590 (penstocks).

Under exigent circumstances, HED retained Gomez & Sullivan Engineers (GSE) to prepare a high-level damage assessment of the penstocks. The GSE engineering report dated 1/31/2025 (attached) has been submitted to FEMA PA. The GSE engineering assessment found the existing condition with flood damage penstocks would entail a very difficult complicated investigation and expensive repair to restore to pre-disaster condition. Thus, alternate options are being considered to replace the two damaged penstocks in-kind or replace with only one penstock. The G&S Report provided a recommendation for the next phase of study. FEMA requests the applicant (HED) develop high level preliminary opinion

of probable cost estimates for all options evaluated. As the Hydropower plant will remain inoperable with damaged penstocks, HED must proceed expeditiously with a **penstock engineering study** in collaboration with FEMA that will provide both Owner and FEMA with further documentation, as needed, to make the owner's final decision on how to best proceed.

The Penstock Damage Description and Dimensions are listed in the FEMA project as follows:

General Damage Information:

- Date Damaged: 7/9/2024 to 7/11/2024
- Cause of Damage: High velocity surface water flooding from the Lamoille River caused native soil erosion and shifted two penstocks

Facility Damage:

- GPS: 44.53667, -72.44413:
- Native Soil, 1,333 CY of unclassified fill material, 200 LF long x 30 LF wide x 6 LF deep, High velocity surface water flooding from the Lamoille River caused native soil erosion and shifted two penstocks, 0% work completed.
- Penstock, 2 each of black coated steel penstock, 485 FT long x 6 FT in diameter, High velocity surface water flooding from the Lamoille River caused native soil erosion and shifted two penstocks, 0% work completed.

**THE PROPOSED** engineering feasibility study will have two components that FEMA has requested HED track separately for purposes of federal funds including engineering fees:

- The 2023 damaged Building & Equipment, and
- The 2024 damaged Penstocks.

It is intended the same engineering firm will study the mitigation options for both components concurrently. Initially, the selected engineering firm will (1) prepare for and then (2) participate in a Kickoff Meeting for the feasibility study with HED representatives (Applicant) and FEMA.

- (1) Preparation efforts will include the engineering team conducting a thorough on-site field inspection of the hydropower plant, including an external and internal penstock survey (confined space), from upstream reservoir through surge tower, to under building water channel to the turbine, and tailrace tunnel to the downstream reservoir. Then prepare documentation of the existing conditions. Distribute the engineer's existing condition survey to the Applicant and designated team members.
- (2) Participate in a pre-Kickoff Meeting to review inspection findings and to establish an agenda of the feasibility study for discussion at the Kickoff Meeting with the many stakeholders. In addition to the HED representatives, FEMA PA and state representatives that may include FEMA program delivery manager (PDMG), FEMA environmental/historic preservation (EHP), FEMA 406 Mitigation, State of Vermont

DEC Floodplain Coordinator, and State of Vermont Emergency Management Coordinator. At the Kickoff Meeting, the engineering team will make a presentation of the existing condition study findings and explore the stakeholder's expectations for mitigation options in the feasibility study.

The feasibility study will include the engineer's preliminary opinion of costs for each reasonable flood mitigation option(s) to minimize future flooding of the two components of the hydropower plant – Building/Equipment and Penstocks. At the conclusion of the feasibility study, HED will decide how to proceed.

The next phase after the feasibility study is to prepare public bidding documents (plans and specifications) of the owner selected final design. Followed by public bidding and construction administration of the contract award.

Kindly submit your statement of qualifications to HED by Friday, April 25 , 2025, at 11 AM. Statement of Qualifications may be submitted electronically to [customerservice@hardwickelectric.com](mailto:customerservice@hardwickelectric.com), or person to 123 N, Main St., Hardwick, Vermont. Please provide a separate attachment that contains your Fee Proposal for the Feasibility Study with a fee breakdown allocated to both components. The RFQ Selection Committee will evaluate and rank the engineering Statement of Qualifications without considering fees. The Engineering Fee Proposal will be considered for contract fee negotiations with the highest ranked firm.

This RFP has several Appendices as described below:

APPENDIX A: from FEMA PAPPG\_v4\_Environmental and Historic Compliance. Issued FYSA.

APPENDIX B: Federal contract clauses and agreement for Professional Services. Issued for the A/E firm to review, execute, and return with their company Statement of Qualifications

APPENDIX C: Photos of the Wolcott Hydropower building and equipment. Issued FYSA.

APPENDIX D: GSE engineering report Wolcott Penstock Assessment 1/31/2025. Issued FYSA.

APPENDIX E: Applicant's RFQ Evaluation Criteria. Issued FYSA.

## APPENDIX A: ENVIRONMENTAL AND HISTORIC PRESERVATION COMPLIANCE

The following statutes and Executive Orders (EOs) are commonly encountered Federal requirements that were established to protect the environment and preserve the Nation's historic and archaeological resources. FEMA reviews each Public Assistance (PA) project to ensure the work complies with applicable Federal environmental and historic preservation (EHP) laws, their implementing regulations, and applicable EOs. Compliance with all Federal and SLTT laws is a requirement of every FEMA award. SLTT laws, such as hazardous material management laws, vary by location and are not included in this appendix.

FEMA prepares a Greensheet at the beginning of each emergency or disaster declaration with specific information relevant to each State and area. The Greensheet briefly discusses the relevant laws and project types that might trigger application of those laws and informs the Applicant that failure to comply with Federal and SLTT laws may jeopardize funding.

### **National Environmental Policy Act**

Section 102 of the National Environmental Policy Act (NEPA) requires Federal agencies to integrate environmental values into their decision-making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions.<sup>385</sup> The White House Council on Environmental Quality publishes its NEPA regulations in Title 40 of the Code of Federal Regulations (C.F.R.) Parts 1500–1508. The U.S. Department of Homeland Security publishes policies and procedures for implementing NEPA and provide specific processes that FEMA must follow before funding a project. The NEPA process ensures consideration of environmental consequences of the project before decisions are made and involves the public.

### **National Historic Preservation Act**

Section 106 of the National Historic Preservation Act (NHPA) requires FEMA to consider the effects an undertaking will have on historic properties and provide the Advisory Council on Historic Preservation the opportunity to comment on the effects of the undertaking.<sup>386</sup> Historic properties include buildings or groups of buildings (districts), structures, objects, landscapes, archaeological sites, and traditional cultural properties included in, or eligible for inclusion in, the National Register of Historic Places.<sup>387</sup>

### **Endangered Species Act**

The Endangered Species Act (ESA) requires Federal agencies to use their authorities to conserve federally listed threatened and endangered species (listed species) and critical habitats. FEMA must also consult with the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's (NOAA's) National Marine Fisheries Service (NMFS), also known as NOAA Fisheries, to ensure that proposed projects will not jeopardize the continued

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<sup>385</sup> 42 U.S.C. § 4332.

<sup>386</sup> 16 U.S.C. § 470f.

<sup>387</sup> [www.nps.gov/subjects/nationalregister/index.htm](http://www.nps.gov/subjects/nationalregister/index.htm).

existence of any listed species or result in the destruction or adverse modification of critical habitat for listed species.<sup>388</sup>

### **Clean Water Act**

The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants in the waters of the United States (e.g., rivers and streams, lakes and ponds, coastlines, wetlands, estuaries). The CWA makes it unlawful to discharge any pollutant from a specific source into navigable waters without the appropriate CWA permits from the U.S. Army Corps of Engineers (USACE) or State regulatory agency.<sup>389</sup> In addition, the CWA requires authorization for dredging or filling in waters (including disposal of dredged material).

### **Rivers and Harbors Act**

The Rivers and Harbors Act requires that authorization be obtained from USACE to construct any structure in or over any navigable water, including authorization for projects involving constructing or modifying bridges and causeways over navigable waters or constructing any dam or dike in a navigable water. Typically, requests for this type of authorization are handled together with requests for authorization of projects under Section 404 of the CWA.

### **Safe Drinking Water Act**

The purpose of the Safe Drinking Water Act is to protect public health by ensuring the quality of drinking water. The law authorizes the U.S. Environmental Protection Agency (EPA) to, among other things, set standards for the levels of individual contaminants allowed in drinking water and designate as aquifers that are the sole or principal source of drinking water for an area as sole source aquifers. For any financial assistance project that has the potential to contaminate an aquifer and that is located in the identified review area for a sole source aquifer, FEMA must consult with the EPA before funding the project.

### **Clean Air Act**

The Clean Air Act (CAA) protects the Nation's air through the reduction of smog and atmospheric pollution. Air quality compliance often requires certain measures be implemented, such as dust abatement, vehicle emissions control, fuel storage, and distribution procedures. There may be additional requirements in nonattainment areas (defined as those areas that do not meet national standards for air quality and, therefore, require more rigorous compliance measures).<sup>390</sup>

### **Coastal Barrier Resources Act**

The Coastal Barrier Resources Act (CBRA)<sup>391</sup> established the John H. Chafee Coastal Barrier Resources System (CBRS), which consists of relatively undeveloped coastal barriers along the Atlantic, Gulf, Great Lakes, and Caribbean coasts. CBRA minimizes adverse impacts to these areas by restricting Federal assistance that encourages development within the CBRS. USFWS

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<sup>388</sup> 16 U.S.C. § 1536, Endangered Species Act Section 7.

<sup>389</sup> 33 U.S.C. § 1251 et seq.

<sup>390</sup> 42 U.S.C. § 7401 et seq.

<sup>391</sup> 16 U.S.C. § 3501 et seq.

publishes maps designating these areas.<sup>392</sup> FEMA must consult with USFWS prior to providing PA funding for work within the CBRs.<sup>393</sup>

### **Migratory Bird Treaty Act**

The Migratory Bird Treaty Act makes it unlawful to pursue, hunt, take, capture, kill, or sell migratory birds listed in the statute without a waiver from USFWS.<sup>394</sup> FEMA consults with USFWS regarding projects likely to trigger compliance with this Act.

### **Bald and Golden Eagle Protection Act**

The Bald and Golden Eagle Protection Act prohibits any person from pursuing, capturing, killing, wounding, disturbing, or otherwise taking bald eagles or golden eagles, including their parts (e.g., feathers), nests, or eggs, unless authorized by a permit from the USFWS. The prohibition on disturbance applies to nests and previously used nest sites when eagles are not present if, were an eagle to return, such alterations would lead to injury, death or nest abandonment.

### **Magnuson-Stevens Fishery Conservation and Management Act**

The Magnuson-Stevens Fishery Conservation and Management Act is the primary law for managing and maintaining sustainable fisheries in waters of the United States. The Magnuson-Stevens Fishery Conservation and Management Act protects essential fish habitat, which includes the waters and substrate necessary to maintain healthy fisheries. FEMA must consult with NMFS when any proposed PA project could have an adverse effect on essential fish habitat (defined as any impact that reduces quality or quantity of essential fish habitat).<sup>395</sup>

### **Marine Mammal Protection Act**

The Marine Mammal Protection Act prohibits, with certain exceptions, the “take” of marine mammals in U.S. waters or by U.S. citizens on the high seas. The law prohibits attempts to hunt, capture, kill, or harass any marine mammals. The law authorizes NMFS or USFWS (depending on the species in question) to issue incidental take permits and incidental harassment authorizations.

### **National Marine Sanctuaries Act (NMSA)**

The National Marine Sanctuaries Act, which is part of the Marine Protection, Research and Sanctuaries Act, authorizes the Secretary of Commerce to designate and manage areas of the marine environment as National Marine Sanctuaries (NMS), which NOAA administers. Activities within each NMS are governed by regulations. A sanctuary resource is defined as any living or nonliving resource of a NMS that contributes to the conservation, recreational, ecological, historical, educational, cultural, archeological, scientific, or aesthetic value of the sanctuary. The National Marine Sanctuaries Act prohibits destroying, injuring, or causing the

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<sup>392</sup> 16 U.S.C. §§ 3501 and 3503. The U.S. Fish and Wildlife Service publishes Coastal Barrier Resource System maps at: [www.fws.gov/ecological-services/habitat-conservation/cbra/Maps/index.html](http://www.fws.gov/ecological-services/habitat-conservation/cbra/Maps/index.html).

<sup>393</sup> 16 U.S.C. § 3505.

<sup>394</sup> 16 U.S.C. §§ 703–712.

<sup>395</sup> 16 U.S.C. §§ 1801–1884.

loss of any sanctuary resource. A permit is required to conduct any activity within a sanctuary that is otherwise prohibited.

### **Coastal Zone Management Act**

The Coastal Zone Management Act (CZMA) provides for the management of the Nation's coastal resources. The CZMA establishes a voluntary partnership between the Federal Government and coastal and great lakes States. It requires participating States to develop State coastal zone management plans. PA projects located in, or near, established coastal zone management areas must be consistent with the enforceable policies of the State's federally approved coastal zone management program.<sup>396</sup> Before approving a project in a coastal zone management area, FEMA consults with the State agency overseeing the implementation of the CZMA plan to ensure the project is consistent with the program's provisions.

### **Farmland Protection Policy Act**

The Farmland Protection Policy Act is intended to minimize the extent to which Federal programs contribute to the conversion of prime or unique farmland, or land of statewide or local importance, to nonagricultural uses and to ensure that Federal programs are administered in a manner that, to the extent practicable, will be compatible with State, local, and private programs and policies to protect farmland. The Farmland Protection Policy Act and U.S. Department of Agriculture (USDA) implementing procedures require FEMA to evaluate whether projects it funds irreversibly convert such farmland to nonagricultural uses and to consider alternative actions that could avoid adverse effects. For projects that have the potential to irreversibly convert such farmland, FEMA must consult with the USDA Natural Resources Conservation Service (NRCS) to identify potential impacts to that farmland.<sup>397</sup>

### **Wild and Scenic Rivers Act**

The Wild and Scenic Rivers Act protects the free-flowing condition of rivers that are part of the National Wild and Scenic Rivers System (System) or are under study for inclusion in the System because of their scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values (the rivers under study are listed on the Nationwide Rivers Inventory or have been formally identified as Study Rivers). If a proposed project is located on a river covered by the Wild and Scenic Rivers Act (including a designated river, a Study River, or a river on the Nationwide Rivers Inventory), FEMA must review it for compliance with the Wild and Scenic Rivers Act and consult with the managing agency for the affected designated river.<sup>398</sup>

### **Resource Conservation and Recovery Act**

The Resource Conservation and Recovery Act (RCRA) established a framework for Federal, State, and local cooperation for controlling the management of hazardous and non-hazardous solid waste. EPA's role is to establish minimum regulatory standards, usually implemented by the States, which can establish their own requirements for solid waste management. RCRA

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<sup>396</sup> 16 U.S.C. § 1451 et seq.

<sup>397</sup> 7 U.S.C. § 4201 et seq.

<sup>398</sup> 16 U.S.C. § 1271 et seq.

requires the safe disposal of waste materials, promotes the recycling of waste materials, and encourages cooperation with local agencies.<sup>399</sup>

### **Comprehensive Environmental Response, Compensation and Liability Act**

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), also known as Superfund, authorizes the Federal Government to respond to releases or threatened releases of hazardous substances into the environment through short-term removals and long-term remedial response actions. Superfund also triggered the development of the National Priorities List, a list of national priorities among the sites with known or threatened releases of hazardous contaminants. The 1986 amendments to CERCLA included the Emergency Planning and Community Right-to-Know Act (EPCRA) which, among other things, creates mechanisms to help local communities plan for chemical emergencies.

### **Executive Order 11988, Floodplain Management**

EO 11988, Floodplain Management, requires Federal agencies to minimize or avoid, to the extent possible, the long- and short-term adverse impacts associated with occupancy and modifications of floodplain and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. It requires Federal agencies to use a systematic decision-making process to evaluate the potential effects of projects located in, or affecting, floodplains; document each step of the process; and involve the public in the decision-making process. This process is designed to:

- Reduce flood loss risks;
- Minimize the impacts of floods on human safety, health, and welfare; and
- Restore and preserve the natural and beneficial functions of floodplains.

FEMA publishes its implementing regulations for EO 11988 in 44 C.F.R. Part 9, Floodplain Management and Protection of the Wetlands. These regulations set forth the policy, procedures, and responsibilities to implement and enforce the EO, including the decision-making process, which is referred to as the 8-step process.<sup>400</sup>

### **Executive Order 11990, Protection of Wetlands**

EO 11990, Protection of Wetlands, requires Federal agencies to avoid to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. To meet these objectives, EO 11990 requires Federal agencies to use a systematic decision-making process to evaluate the potential effects of projects in, or affecting, wetlands; document each step of the process; and involve the public in the decision-making process.

FEMA publishes its implementing regulations for EO 11990, Protection of Wetlands in 44 C.F.R. Part 9, Floodplain Management and Protection of the Wetlands. These regulations set forth the policy, procedures, and responsibilities to implement and enforce the EO, including the decision-making process, which is referred to as the 8-step process.

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<sup>399</sup> 42 U.S.C. § 6901 et seq.

<sup>400</sup> 44 C.F.R. § 9.6, Decision-making process.



**Executive Order 12898, Environmental Justice**

EO 12898, Environmental Justice, requires Federal agencies to identify and address any disproportionately high and adverse human health or environmental effects on minority and low-income populations as a result of their actions.

**Executive Order 13112, Invasive Species**

EO 13112, Invasive Species, requires agencies to use their programs and authorities to help prevent the introduction, establishment, and spread of invasive species; respond to invasive species outbreaks; restore native species in areas invaded by invasive species; promote public education related to invasive species control; and avoid authorizing, funding, or carrying out activities that promote the introduction, establishment, or spread of invasive species.

**APPENDIX to CONTRACT**

**FEDERAL CERTIFICATIONS FOR CONTRACT FUNDED BY FEDERAL FUNDS**

(base form rev. 12/2020)

The following certifications and provisions are required and apply when \_\_\_\_\_ a Non-Federal Entity "NFE" expends federal funds for any contract resulting from this procurement process. Accordingly, the parties agree that the following terms and conditions apply to the Contract between "NFE" and \_\_\_\_\_ ("Contractor") in all situations where Contractor has been paid or will be paid with federal funds:

**REQUIRED CONTRACT PROVISIONS FOR NON-FEDERAL ENTITY CONTRACTS UNDER FEDERAL AWARDS APPENDIX II TO 2 CFR PART 200**

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- A. Contracts for more than the simplified acquisition threshold currently set at \$250,000, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.**

Pursuant to Federal Rule (A) above, when "NFE" expends federal funds, "NFE" reserves all rights and privileges under the applicable laws and regulations with respect to this procurement in the event of breach of contract by either party.

Does Contractor agree? YES \_\_\_\_\_ Initials of Authorized Representative of Contractor \_\_\_\_\_

- B. Termination for cause and for convenience by the grantee or sub grantee including the manner by which it will be affected and the basis for settlement. (All contracts in excess of \$10,000)**

Pursuant to Federal Rule (B) above, when "NFE" expends federal funds, "NFE" reserves the right to immediately terminate any agreement in excess of \$10,000 resulting from this procurement process in the event of a breach or default of the agreement by Contractor in the event Contractor fails to: (1) meet schedules, deadlines, and/or delivery dates within the time specified in the procurement solicitation, contract, and/or a purchase order; (2) make any payments owed; or (3) otherwise perform in accordance with the contract and/or the procurement solicitation. "NFE" also reserves the right to terminate the contract immediately, with written notice to Contractor, for convenience, if "NFE" believes, in its sole discretion that it is in the best interest of "NFE" to do so. Contractor will be compensated for work performed and accepted and goods accepted by "NFE" as of the termination date if the contract is terminated for convenience of the NFE. Any award under this procurement process is not exclusive and "NFE" reserves the right to purchase goods and services from other Contractors when it is in "NFE"'s best interest.

Does Contractor agree? YES \_\_\_\_\_ Initials of Authorized Representative of Contractor \_\_\_\_\_

- C. Equal Employment Opportunity. (Construction Work) Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of "federally assisted construction contract" in 41 CFR Part 60-1.3 must include the equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and implementing regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor.**

During the performance of this contract, the contractor agrees as follows:

- 1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- 2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- 3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
- 4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- 5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- 6) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- 7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- 8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a contractor becomes involved in, or is threatened with,

litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work:

Provided, that if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

Does Contractor agree? YES \_\_\_\_\_ Initials of Authorized Representative of Contractor

**D. Compliance with the Davis-Bacon Act. (Construction Work) (Not applicable to FEMA PA Grant)**

**E. Compliance with the Copeland Anti-Kickback Act. (Construction Work > \$2,000) (Not applicable to FEMA PA GRANT)**

**F. Compliance with the Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708).  
(\$100K + mechanics or laborers)**

- 1) **Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
- 2) **Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of \$26 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.
- 3) **Withholding for unpaid wages and liquidated damages.** The "NFE" shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.
- 4) **Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

Pursuant to Federal Rule (F) above, when "NFE" expends federal funds, Contractor certifies that Contractor will be in compliance with all applicable provisions of the Contract Work Hours and Safety Standards Act during the term of an award for all contracts by "NFE" resulting from this procurement process.

Does Contractor agree? YES \_\_\_\_\_ Initials of Authorized Representative of Contractor \_\_\_\_\_

**G. Rights to Inventions Made Under a Contract or Agreement. (Not applicable to FEMA PA GRANT)**

**H. Clean Air Act and Federal Water Pollution Control Act.**

**Clean Air Act**

- 1) The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.
- 2) The contractor agrees to report each violation to the “NFE” and understands and agrees that the “NFE” will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
- 3) The contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA.

**Federal Water Pollution Control Act**

- 1) The contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.
- 2) The contractor agrees to report each violation to the “NFE” and understands and agrees that the “NFE” will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
- 3) The contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA.

Pursuant to Federal Rule (H) above, when federal funds are expended by “NFE”, Contractor certifies that during the term of an award for all contracts by “NFE” resulting from this procurement process, Contractor agrees to comply with all applicable requirements as referenced in Federal Rule (H) above.

Does Contractor agree? YES \_\_\_\_\_ Initials of Authorized Representative of Contractor

**I. Suspension and Debarment.**

- 1) This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the contractor is required to verify that none of the contractor’s principals (defined at 2 C.F.R. § 180.995) or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).
- 2) The contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered

transaction it enters into.

- 3) This certification is a material representation of fact relied upon by "NFE". If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to "NFE" the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.
- 4) The bidder or proposer agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

Pursuant to Federal Rule (I) above, when federal funds are expended by "NFE", Contractor certifies that during the term of an award for all contracts by "NFE" resulting from this procurement process, Contractor certifies that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation by any federal department or agency.

Does Contractor agree? YES \_\_\_\_\_ Initials of Authorized Representative of Contractor

- J. Byrd Anti-Lobbying Amendment (31 U.S.C. 1352, as amended)- Contractors that apply or bid for an award exceeding \$100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal awarding agency.**

Pursuant to Federal Rule (J) above, when federal funds are expended by "NFE", Contractor certifies that during the term and after the awarded term of an award for all contracts by "NFE" resulting from this procurement process, the Contractor certifies that it is in compliance with all applicable provisions of the Byrd Anti-Lobbying Amendment (31 U.S.C. 1352). The undersigned further certifies that:

- a) No Federal appropriated funds have been paid or will be paid for on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of congress, or an employee of a Member of Congress in connection with the awarding of a Federal contract, the making of a Federal grant, the making of a Federal loan, the entering into a cooperative agreement, and the extension, continuation , renewal, amendment, or modification of a Federal contract, grant, loan, or cooperative agreement.
- b) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of congress, or an employee of a Member of Congress in connection with this Federal grant or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying", in accordance with its instructions.
- c) The undersigned shall require that the language of this certification be included in the award documents for all covered sub-awards exceeding \$100,000 in Federal funds at all appropriate tiers and that all subrecipients shall certify and disclose accordingly. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not

less than \$10,000 and not more than \$100,000 for each such failure.

The Contractor certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Chap.38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

Does Contractor agree? YES \_\_\_\_\_ Initials of Authorized Representative of Contractor

**K. Required Affirmative Steps for Small, Minority, And Women-Owned Firms for Contracts Paid for with Federal Funds**

When federal funds are expended by "NFE", Contractor is required to take all affirmative steps set forth in 2 CFR 200.321 to solicit and reach out to small, minority and women owned firms for any subcontracting opportunities on the project, including: 1) Placing qualified small and minority businesses and women's business enterprises on solicitation lists; 2) Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources; 3) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises; 4) Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises; and 5) Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business and Development Agency of the Department of Commerce.

Does Contractor agree? YES \_\_\_\_\_ Initials of Authorized Representative of Contractor

**L. Access to Records – 2 CFR § 200.337 (change in reference from 2 CFR § 200.336 to 2 CFR § 200.337 effective for FEMA awards issued on or after November 12, 2020)**

- 1) The Contractor agrees to provide (insert name of state agency or local or Indian tribal government), (insert name of recipient), the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.
- 2) The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.
- 3) The Contractor agrees to provide the FEMA Administrator or his authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.
- 4) In compliance with the Disaster Recovery Act of 2018, the NFE and the Contractor acknowledge and agree that no language in this contract is intended to prohibit audits or internal reviews by the FEMA Administrator or the Comptroller General of the United States.

Does Contractor agree? YES \_\_\_\_\_ Initials of Authorized Representative of Contractor

**M. Procurement of Recovered Material (Applies to state or political subdivision of state.)**

- 1) In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired—
  - Competitively within a timeframe providing for compliance with the contract performance schedule;
  - Meeting contract performance requirements; or



- At a reasonable price.
- 2) Information about this requirement, along with the list of EPA-designated items, is available at EPA's Comprehensive Procurement Guidelines web site, <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>.
  - 3) The Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.

Pursuant to Federal Rule (M) above, when federal funds are expended by "NFE", as required by the Resource Conservation and Recovery Act of 1976 (42 U.S.C. § 6962(c)(3)(A)(i)), the Contractor certifies, by signing this document, that the percentage of recovered materials content for EPA-designated items to be delivered or used in the performance of the contract will be at least the amount required by the applicable contract specifications or other contractual requirements.

Does Contractor agree? YES \_\_\_\_\_ Initials of Authorized Representative of Contractor

**N. Record Retention Requirements for Contracts Involving Federal Funds (change in reference from 2 CFR § 200.333 to 2 CFR § 200.334 effective for FEMA awards issued on or after November 12, 2020)**

When federal funds are expended by "NFE" for any contract resulting from this procurement process, Contractor certifies that it will comply with the record retention requirements detailed in 2 CFR § 200.334. Contractor further certifies that it will retain all records as required by 2 CFR § 200.334 for a period of three years after grantees or subgrantees submit final expenditure reports or quarterly or annual financial reports, as applicable, and all other pending matters are closed.

Does Contractor agree? YES \_\_\_\_\_ Initials of Authorized Representative of Contractor

**O. Domestic Preferences for Procurements – 2 CFR § 200.322 (effective for FEMA awards issued on or after November 12, 2020)**

As appropriate and to the extent consistent with law, the non-Federal entity should, to the greatest extent practicable under a Federal award, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products under this award.

For purposes of this section:

- 1) "Produced in the United States" means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.
- 2) "Manufactured products" means items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

Does Contractor agree? YES \_\_\_\_\_ Initials of Authorized Representative of Contractor

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**FEMA RECOMMENDED PROVISIONS**

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**CONTRACT CHANGES OR MODIFICATIONS**

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Changes: Contractor agrees that in the event of any changes or modifications to the method, price, or schedule of the work, the cost of such changes will be reasonable, allowable, and within the scope of the grant.

Does Contractor agree? YES \_\_\_\_\_ Initials of Authorized Representative of Contractor

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**DHS SEAL, LOGO, AND FLAGS**

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Contractor agrees that it shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without specific FEMA pre-approval.

Does Contractor agree? YES \_\_\_\_\_ Initials of Authorized Representative of Contractor

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**COMPLIANCE WITH FEDERAL LAW, REGULATIONS, AND EXECUTIVE ORDERS**

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Contractor agrees that FEMA financial assistance will be used to fund the Contract. The Contractor will comply with all applicable federal Law, regulations, executive orders, FEMA policies, procedures, and directives.

Does Contractor agree? YES \_\_\_\_\_ Initials of Authorized Representative of Contractor

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**NO OBLIGATION BY FEDERAL GOVERNMENT**

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The Federal Government is not a party to this contract and is not subject to any obligations or liabilities to the non-Federal entity, Contractor, or any other party pertaining to any matter resulting from the contract.

Does Contractor agree? YES \_\_\_\_\_ Initials of Authorized Representative of Contractor

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**PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS OR RELATED ACTS**

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Contractor acknowledges that 31 U.S.C. Chapter 38 (Administrative Remedies for False Claims and Statements) applies to the Contractor's actions pertaining to this contract.

Does Contractor agree? YES \_\_\_\_\_ Initials of Authorized Representative of Contractor \_\_\_\_\_

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### FEMA SPECIAL TERMS AND CONDITIONS

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**Time and Materials:** Any time and materials contract must include a ceiling/not-to-exceed price that the Contractor exceeds at its own risk. The Contractor also agrees to assert a high degree of oversight in order to obtain reasonable assurance that the Contractor is using efficient methods and effective cost controls, and Contractor agrees to fully cooperate with such oversight measures 2 CFR § 200.318(j)(1).

Does Contractor agree? YES \_\_\_\_\_ Initials of Authorized Representative of Contractor \_\_\_\_\_

**No Involvement in Development of Specifications:** Contractor acknowledges that Contractor was not involved with developing or drafting specifications, requirements, statement of work, invitation for bids or request for proposals for this procurement solicitation/contract. 2 CFR § 200.319(b).

Does Contractor agree? YES \_\_\_\_\_ Initials of Authorized Representative of Contractor \_\_\_\_\_

**"Cost plus a percentage of cost" Contracts Prohibited:** "Cost plus a percentage of cost" or "percentage of construction cost" forms of contract are prohibited under the Federal procurement standards and are ineligible for FEMA reimbursement. 2 CFR §200.324(d).

Does Contractor agree? YES \_\_\_\_\_ Initials of Authorized Representative of Contractor \_\_\_\_\_

**Bonding Requirements:** In accordance with 2 CFR § 200.326, for construction or facility improvement contracts or subcontracts exceeding the federal Simplified Acquisition Threshold, the Federal awarding agency or pass-through entity may accept the bonding policy and requirements of "NFE" provided that the Federal awarding agency or pass-through entity has made a determination that the Federal interest is adequately protected. If such a determination has not been made, the minimum requirements must be as follows: (a) A bid guarantee from each bidder equivalent to five percent of the bid price. The "bid guarantee" must consist of a firm commitment such as a bid bond, certified check, or other negotiable instrument accompanying a bid as assurance that the bidder will, upon acceptance of the bid, execute such contractual documents as may be required within the time specified. (b) A performance bond on the part of the contractor for 100 percent of the contract price. A "performance bond" is one executed in connection with a contract to secure fulfillment of all the contractor's obligations under such contract. 6 (c) A payment bond on the part of the contractor for 100 percent of the contract price. A "payment bond" is one executed in connection with a contract to assure payment as required by law of all persons supplying labor and material in the execution of the work provided for in the contract.

Does Contractor agree? YES \_\_\_\_\_ Initials of Authorized Representative of Contractor \_\_\_\_\_

**Administrative Remedies:** Contractor acknowledges that 31 U.S.C. Chapter 38 (Administrative Remedies for False Claims and Statements) applies to the Contractor's actions pertaining to the Contract.

Does Contractor agree? YES \_\_\_\_\_ Initials of Authorized Representative of Contractor \_\_\_\_\_

**License and Delivery of Works Subject to Copyright and Data Rights:** The Contractor grants to the non-federal entity a paid-up, royalty-free, nonexclusive, irrevocable, worldwide license in data first produced in the performance of this contract to reproduce, publish, or otherwise use, including prepare derivative works, distribute copies to the public, and perform publicly and display publicly such data. For data required by the contract but not first produced in the performance of this contract, the Contractor will identify such data and grant to the (insert name of the non-federal entity) or acquires on its behalf a license of the same scope as for data first produced in the performance of this contract. Data, as used herein, shall include any work subject to copyright under 17 U.S.C. § 102, for example, any written reports or literary works, software and/or source code, music, choreography, pictures or images, graphics, sculptures, videos, motion pictures or other audiovisual works, sound and/or video recordings, and architectural works. Upon or before the completion of this contract, the Contractor will deliver to the (insert name of the non-federal entity) data first produced in the performance of this contract and data required by the contract but not first produced in the performance of this contract in formats acceptable by the (insert name of the non-federal entity).

Does Contractor agree? YES \_\_\_\_\_ Initials of Authorized Representative of Contractor \_\_\_\_\_

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FEMA PROJECT Nos. 726491, 736479, and 759590 PROCUREMENT of:

RFQ PROPOSAL for PROFESSIONAL ENGINEERING & RELATED SERVICES for  
Wolcott Hydropower Building, Turbine/Generator Equipment, and Pottersville Dam Penstock

CONTRACTOR AGREES TO COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, RULES, REGULATIONS, AND ORDINANCES. IT IS FURTHER ACKNOWLEDGED THAT CONTRACTOR CERTIFIES COMPLIANCE WITH ALL PROVISIONS, LAWS, ACTS, REGULATIONS, ETC., AS SPECIFICALLY NOTED ABOVE.

Contractor ' s Name: \_\_\_\_\_

Address, City, State, and Zip Code: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Fax

Number: \_\_\_\_\_

Printed Name and Title of Authorized Representative \_\_\_\_\_

Email Address: \_\_\_\_\_

Signature of Authorized Representative: \_\_\_\_\_

Date: \_\_\_\_\_



**APPENDIX C: 2024 Photos of Hydropower Building and Equipment**

**2023 Disaster:** DR4720-VT. Flooding was 90 inches above first floor slab

**2024 Disaster:** DR4810-VT. Flooding was 42 inches above first floor slab

**Applicant:** Hardwick Electric Department

**Site:** Wolcott Hydropower Building

**Location:** 149 Power Plant Road, Wolcott VT



☉ 348°N (T) ● 44.536602°N, 72.444420°W ±13ft ▲ 723ft



Photo 1: Front North elevation of the Wolcott hydropower building



☉ 304°NW (T) ● 44.536646°N, 72.444294°W ±13ft ▲ 710ft



Photo 2: Penstock West side elevation of the Wolcott hydropower building



☉ 226°SW (T) ● 44.536839°N, 72.444292°W ±13ft ▲ 710ft



Photo 3: Tailrace (to Lamoille River) backside of the Wolcott hydropower building



☉ 77°E (T) ● 44.536683°N, 72.444637°W ±13ft ▲ 712ft



Photo 4: East elevation of the Wolcott hydropower building



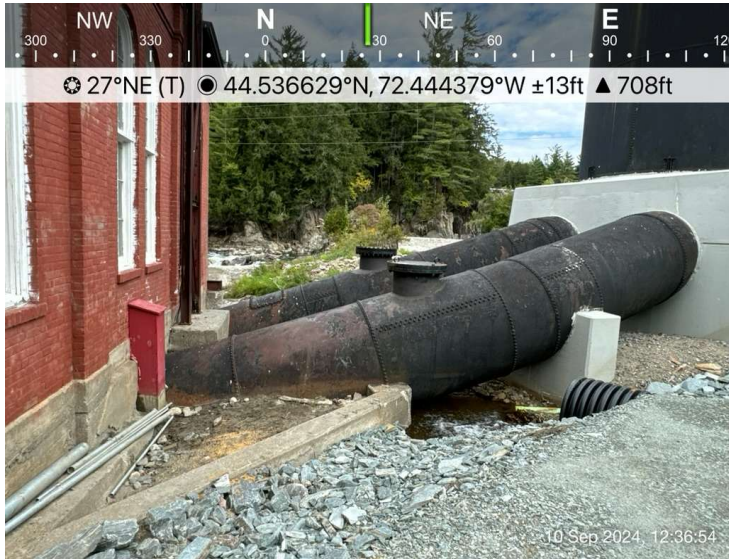


Photo 5: Exterior penstock building entry to turbine below the first floor slab. Surge tower at right in photo.

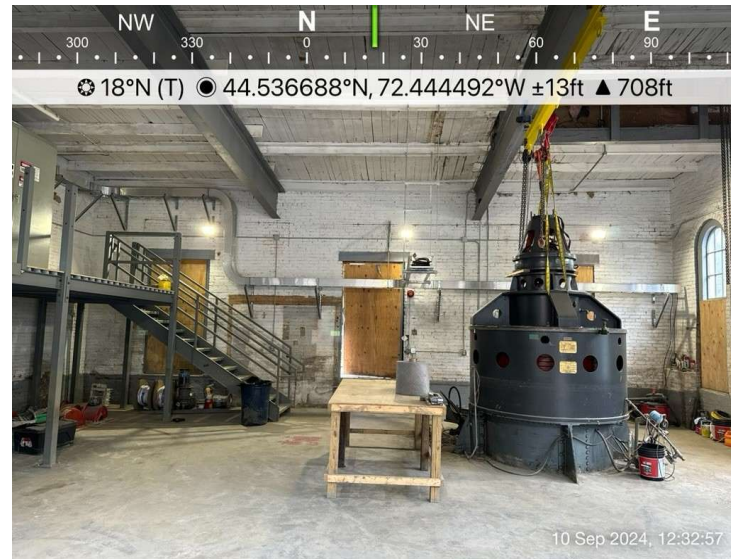


Photo 6: Interior view of 800kW Kaplan Turbine Generator (right in photo)

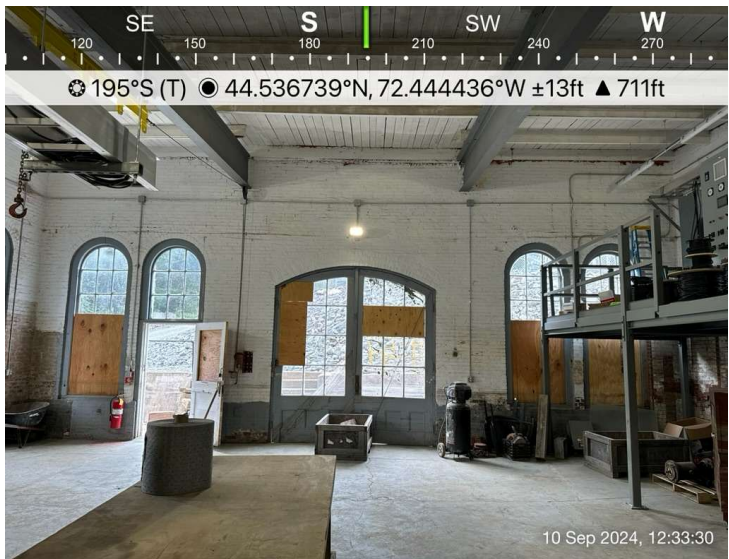


Photo 7: Interior south elevation showing front entry doors

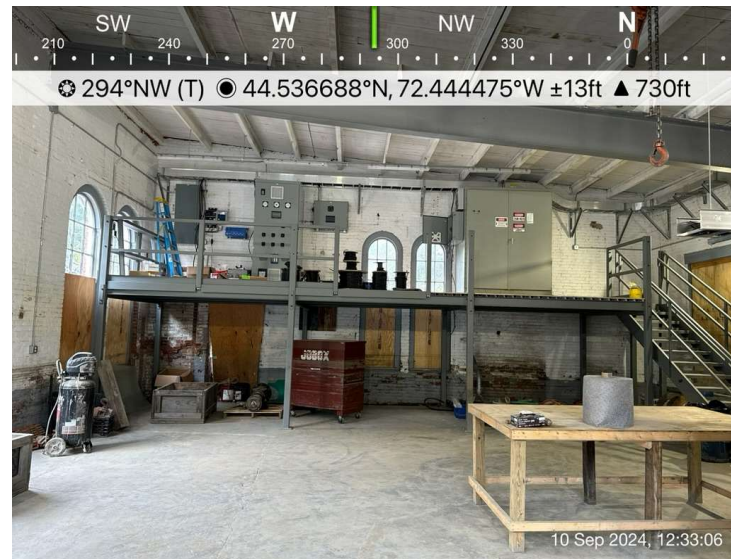


Photo 8: Interior west elevation showing newer mezzanine to elevate generator controls and electrical panels flood damaged in 2023



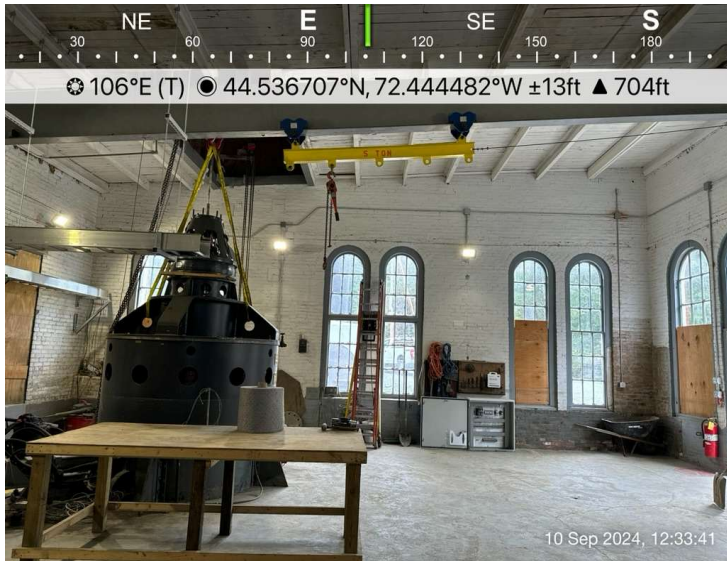


Photo 9: Interior east elevation of facility September 2024 with rebuilt generator installed, not yet operational



Photo 10: Detail view down into well / turbine area in September after July 2024 flooding

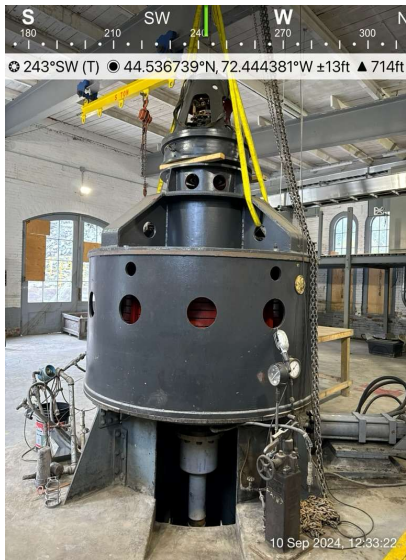


Photo 11/12: Detail view of turbine and generator equipment re-flooded in July 2024. Nameplate data photo



Photo 13/14: Several details view of Turbine/generator equipment





January 31, 2025

Ms. Sarah Braese  
General Manager  
Hardwick Electric Department  
123 N Main Street  
Hardwick VT. 05843

Re: Pottersville (Wolcott) Dam Penstock Assessment (GSE No 2506)

Dear Ms. Braese:

The assessments and recommendations presented below are provided in accordance with the Agreement for Professional Services related to the Pottersville (Wolcott) Dam Penstock Assessment between Hardwick Electric Department and Gomez and Sullivan Engineers, D.P.C. dated the 23<sup>rd</sup> day of September 2024.

#### **BACKGROUND**

The Wolcott Dam was constructed in 1920 as a hydropower project for the Town of Wolcott. Hardwick Electric Department (HED) is the current owner of the dam. The Wolcott Dam is a 384-foot-long concrete gravity dam constructed on bedrock with a 186-foot ogee spillway located at the right side of the dam. The spillway is divided by a center sluiceway pier; the right spillway section is 120 feet in length and the left section is 66 feet long. A gatehouse and intake structure is located to the left of the spillway and includes two (2) 6-foot diameter riveted steel plate penstocks. The gatehouse has a 20-foot wide by 30-foot-high opening, in the concrete below the waterline. An intake gallery connects this opening to the penstocks. Flow to the penstocks is controlled by two manually controlled timber vertical slide gates located in the gatehouse. The penstocks transport water downstream, generally along the left side of the dam, to the Powerhouse. The Powerhouse contains a vertical S. Morgan Smith-Kaplan turbine with 800kW instantaneous power production. The Powerhouse discharges water back into the river via a tailrace that is separated from the main river channel by a low concrete tailrace wall.

A concrete retaining wall was constructed along the left bank of the river just downstream of the dam to separate and protect the penstocks and the powerhouse from river flows downstream of the dam. We understand that normally most of the length of the six-foot diameter penstock pipes were buried in an embankment.

A flood occurred on July 10, 2023, that overtopped the retaining wall (flood protection wall) that protects the penstocks and powerhouse from high river flows. This was reportedly the second time the flood protection wall was overtopped in over 100 years of operation. The powerhouse generator was



damaged during the flood and the hydroelectric facility was taken offline while generator repairs were being made. Since the generators were offline the penstocks were dewatered.

On July 10, 2024, another high-water event occurred that overtopped the flood protection wall that separated the river from the penstocks. The penstocks were dewatered, and the flood waters reportedly eroded the fill over the penstocks, lifted the existing penstock pipes off of their supports (concrete saddles) and moved the penstock pipes. After the flood waters receded it was observed that most of the embankment materials above the penstocks had been eroded away and the pipes were moved off some of the saddle supports.

## **SITE VISIT**

Gomez and Sullivan was asked to perform a site visit to make high level exterior observations of the penstock pipes and to make high level recommendations for potential remediation solutions for the damaged penstock pipes. Jerry Gomez from Gomez and Sullivan Engineers conducted a site visit and observed the penstocks on October 8, 2024. Some of the observations from the site visit are presented in the attached photos and described below:

- Embankment materials above the pipe have eroded away. The penstock floated and moved during the flood, lifting the pipes off their support saddles. Photo 1 shows a large gap between the penstock pipe and its supporting saddle.
- For the most part, the embankment materials covering the pipes have eroded away leaving most of the pipes exposed. Photo 2 shows the remains of embankment material covering the pipes and the eroded embankment material to the right of the pipe.
- Penstock pipe punctured with a hole in the side of the pipe, Photo 3.
- Penstock pipe damaged and bent, Photo 4.
- Penstock Pipe leaking Photo 5
- Penstocks have been undermined and are no longer supported by all the concrete saddles. Photos 6, 7 8, and 9.
- Photo 10 is a picture of the flood wall that separates the river from the penstocks, The wall has reportedly been overtopped three times in the past 100 years, during the floods of 1927, 2023, and 2024

The existing penstocks are relatively thin-walled riveted steel pipes that are over 100 years old. The findings above are based upon high-level visual observations of the exterior of the pipes. More detailed inspections would likely find more dents and holes in the pipe. The embankment materials have eroded away from the pipes and the pipes were floated or lifted off the existing concrete saddles. This movement has induced stresses into the pipe that the pipe may not have encountered since its original installation. This movement and stress may likely have resulted in the movement of the pipe sections relative to each other at the rivet locations. There may likely be leaks near or at rivet locations. These leaks will not be discovered until the pipes are filled with water under pressure.

## **RECOMMENDATIONS**

Potential remedial solution alternatives include:

1. Repairing the existing Penstocks

2. Replace the existing, damaged Penstocks
3. Protection against future flood damage.

These are discussed further below:

#### REPAIRING EXISTING PENSTOCKS

The existing penstocks could be repaired but this would likely be an expensive alternative that would likely include multiply inspections during the penstock repair process. Also, the penstocks are over 100 years old, and based on the conditions observed during the site visit, it is likely that the penstocks have experienced some corrosion/loss of material thickness. Thickness testing of the penstock shell has not been provided to us for this evaluation. Even though the pipe wall thickness may have been sufficient to resist the in-service loads prior to the July 2024 flood, the pipes may not have the structural strength necessary to survive the loads caused by the construction activities necessary to reset the pipes to their original configuration and construction condition, etc. during remedial repairs.

The existing penstocks would need to be carefully lifted to remove debris below the pipes and reset on the existing supporting saddles. The penstock is a large diameter, relatively thin-walled pipe hundreds of feet long. The pipe could not possibly be lifted as a complete unit and as sections of pipe are lifted additional bending and shear stresses could be induced into the pipe beyond what the pipe has previously experienced. In addition, the moment on the pipe could loosen the 100+-year-old rivets. After the pipe is repositioned on the supporting saddles another interior inspection of the penstock would need to be performed to determine if the movement of the pipe resulted in any additional damage.

The dents in the pipe would need to be hammered out, or sections of the outer wall removed and replaced. Holes in the penstock would need to be patched with welded plates.

As mentioned above, the flood could have resulted in relative movement at the rivet locations. In addition, the movement of the pipe back onto the saddles could induce stresses near the rivets which could also loosen the rivets and result in leakage at or near the rivet holes. After the penstocks are reset on the saddles, the pipes would need to be watered up and another inspection performed to identify leaking of loose rivet locations. A lot of repair work needs to be carried out before this inspection can be performed. The amount of leakage at or near the rivet holes could be excessive and very difficult and expensive to repair. The pipe would then need to be dewatered, and the leaking areas repaired.

#### REPLACING EXISTING PENSTOCKS

The existing penstocks could be replaced. New penstocks would be the better option as the replacement with new material (such as welded steel or FRP pipe) would likely be a quicker and easier construction process. The two penstock arrangement was designed based on the original two unit powerhouse, whereas the powerhouse currently only has one unit. The replacement of the two damaged penstocks with one new penstock should be evaluated. The new penstock(s) could be sized to match the hydraulic capacity of the existing unit which may likely result in cost savings.

## PROTECTION AGAINST FUTURE FLOOD DAMAGE

The flood wall has been overtopped twice in the last two years by flood events that have resulted in damage to the powerhouse/generator and the penstocks. Consideration should be given to raising the height of the flood wall to increase the flood protection.

### Recommendations

Normally we would recommend that a detailed interior and exterior inspection of the penstock be performed that would identify all the noted deficiencies and their locations along the pipes. The inspection would include obtaining pipe thickness measurements along the length of the two penstocks. Calculations would then be performed to determine hydraulic capacity of the pipes and to assess the structural capacity that may be available to lift the pipes and reset them on the existing saddles. However, from experience this will be costly and if repairs are implemented you are putting a lot of money into repairing a 100-year-old structure not expected to have a long-life expectancy. We don't believe this would be prudent use of the funds.

We believe that the existing pipe should be replaced and recommend that an alternative analysis be performed to determine the pros and cons of the replacing the two penstocks with one larger pipe or two smaller pipes. The alternatives analysis would evaluate the site and or facility modifications that would be required for going from a two penstock system to a single penstock.

High level opinion of probable construction cost (OPCC) estimates should be developed for all alternatives evaluated.

Flood mitigation options should be evaluated to protect both the penstock(s) and the powerhouse from future flooding events. These options should include raising the existing flood wall, burying the penstock(s) with erosion resistant materials, strapping the penstock down to the support saddles, and/or the use of other concrete walls or barriers at appropriate locations on the site.

After these studies are completed, the Owner should select their preferred alternative for final design. Plans and specifications would be developed for the selected alternative and submitted to the proper review agencies, along with required permit applications

The above letter report has been prepared in accordance with our Agreement. Please contact me if you have any questions, or need further assistance.

Sincerely,



Jerry Gomez, P.E.  
Founding Principal/Sr Civil Engineer

## Site Visit Photos October 2024



*Photo 1 Looking down penstocks towards Powerhouse.  
Note gap between penstock and saddle support, and the remnants of material between pipes closer to surge tank*



*Photo 2 Looking up penstocks. Note eroded embankment on the right side and some soil on penstocks. Upper part of penstocks reportedly had a thin layer of soil (6"±) on top of pipes.*





Photo 3 Hole in right penstock. Reportedly the bottom of the penstocks is the thinnest.



Photo 4 Dent and hole in right penstock.





*Photo 5 Leak from right penstock.*



*Photo 6 Right penstock undermined several feet; no longer on several saddles.*





*Photo 7 Right penstock at expansion joint (just upstream of surge tank); note penstock up off saddle.*



*Photo 8 Looking up penstock at bend*





*Photo 9 Right penstock looking upstream - off saddle support.*



*Photo 10 Looking down spillway channel from dam.  
Note floodwall separating the penstocks from the river.*

## APPENDIX E: Applicant's RFQ Evaluation Criteria

The evaluation criteria of the A/E Statement of Qualifications to HED are as follows:

- 45 points      Qualifications and Experience of Engineering Firm
- Qualifications and experience of those in the firm AND those that will be subconsultants working under the firm's umbrella.
  - Availability of qualified personnel
  - Past performance records with clients and FEMA PA mitigation grants
  - References (a minimum of 3 relevant references in the last 3 years; Provide the contact person's name, phone number and email address)
- 25 Points      Location considerations and how it impacts maintaining effective communication between HED and A/E Consultant
- Location of the team and proximity of key personnel
  - Approach to maintaining good communication
- 20 Points      Knowledge and Understanding of Hardwick Electric Department
- Affirmative statement showing an understanding of HED's process and the special needs and unique environment of HED
  - Affirmative statement on the level of service that will be provided to HED
- 10 Points      Scheduling
- Willingness to meet time and budget requirements
  - Recent, current and projected workload of team

Total: 100 Points