

Committee on Energy and Commerce

U.S. House of Representatives

Witness Disclosure Requirement - "Truth in Testimony"
Required by House Rule XI, Clause 2(g)(5)

1. Your Name: John J Devine		
2. Your Title: National Hydropower Association Past President 1998-1999		
3. The Entity(ies) You are Representing: National Hydropower Association (NHA)		
4. Are you testifying on behalf of the Federal, or a State or local government entity?	Yes	No x
5. Please list any Federal grants or contracts, or contracts or payments originating with a foreign government, that you or the entity(ies) you represent have received on or after January 1, 2015. Only grants, contracts, or payments related to the subject matter of the hearing must be listed. Neither I personally or the entity I am representing, NHA, have received Federal grants or contracts. However, HDR, the engineering-architecture-design build firm I currently work for as a Senior Vice President (but am not representing at this hearing) have received various Federal, State, and local contracts.		
6. Please attach your curriculum vitae to your completed disclosure form.		

Signature: 

Date: 2-23-18



John J. Devine, P.E.

Senior Vice President

EDUCATION

Graduate Courses - Water Resources, Colorado State University, 1975/1976

B.S. Civil Engineering, Union College, 1973

REGISTRATION

Professional Engineer, Maine (1980)

PROFESSIONAL MEMBERSHIPS

Board of Directors, National Hydropower Association (1993-2002)

President, National Hydropower Association (1998-1999 Term)

Hydropower Industry Representative to "Low Impact Hydro" Certification Process Committee

Trustee, Maine Audubon (1999-2002)

Trustee, Westbrook College (1995-1997)

FERC Certified Part 12 Independent Inspector

Member, Board of Directors, Brazilian Resources, Inc. (1997-2001)

American Society of Civil Engineers

INDUSTRY TENURE

45 years

AWARDS

Distinguished Service Award, National Hydropower Association (1998-1999)

National Hydropower Association's Dr. Kenneth Henwood Award (2002)

Maine ASCE Civil Engineer of the Year 2015

John Devine, P.E., former founding member and President of the hydropower specialty firm Devine Tarbell & Associates, Inc., has a career spanning nearly 45 years dedicated to hydropower and water resources. John began his career working for the U.S. Bureau of Reclamation in Durango, Colorado as a Hydraulic Engineer on major water resource projects conducting open-channel and closed conduit hydraulic analysis, consumptive use studies, water quality analyses, and environmental impact assessments. Over his 40 years in the private sector beginning in 1978, his project roles have included hydraulic design, lead civil design engineer, Project Engineer, and Project Manager for the planning, design, FERC licensing/relicensing, and construction of hydropower facilities.

Mr. Devine has undertaken and completed hydropower projects in 20 states; has appeared as an expert witness before public utility commissions, bench trials, and jury trials; and has appeared before state and Congressional committees related to hydropower. He is an expert in the planning, evaluation, layout, design and licensing of hydropower projects and systems, including hydrologic and hydraulic analyses of dams, powerhouses, intakes, spillways, fishways, penstocks, and modeling of multi-development systems. He was responsible for the hydraulic layout, design, and energy assessments of numerous hydropower projects, including Pontook (NH), West Enfield (ME), Hydro-Kennebec (ME), Swans Falls (ID), Worumbo (ME), Sheldon Springs (VT), Lower Raquette system (NY), and Oswego River system (NY). Mr. Devine has been a member of Board of Consultants (Brookfield Renewable Energy) and expert oversight panel (Yuba River, CA)

John has been active in the National Hydropower Association (NHA) dating back to 1987, served on its Board of Directors for nine years, and was the first consultant ever elected to be its President (1998 to 1999 term). In 2002, John received the industry's foremost honor – the Dr. Kenneth Henwood Award -- from NHA for his dedication and service to the hydropower industry.

For the last 20 years, the majority of Mr. Devine's consulting work has been serving various clients as Project Manager for the licensing and relicensing of major hydropower projects. In this role, he has been responsible for directing the development and implementation of engineering, environmental, and socioeconomic studies to assess project impacts and develop cost-effective environmental enhancement solutions. Mr. Devine has served or is currently serving in the role of relicensing strategic advisor or relicensing Project Manager to Nantahala Power (NC); Duke Power (NC/SC); Grant PUD (WA); Sacramento Municipal Utility District (CA); Progress Energy (NC/SC); Public Service Company of Colorado (CO); Great Lakes Hydro (ME); Douglas PUD (WA); Sabine River Authority of Texas (TX); Sabine River Authority (LA); Olympus Power (PA); Turlock Irrigation District (CA); and Modesto Irrigation District (CA). He has also served as Lead Negotiator for clients in multilateral settlement negotiations on issues related to balancing the needs of generation and operations with instream flows, wildlife, anadromous fish, water quality, socioeconomics, and Tribal concerns.

Mr. Devine has worked on well over 150 individual hydroelectric projects during his career and has worked closely with clients to successfully meet challenges covering the full gamut of hydropower issues related to both single development facilities and complete hydropower systems extending throughout an entire watershed.

RELEVANT EXPERIENCE

Don Pedro Project, Turlock Irrigation District and Modesto Irrigation District, California

Since 2009, Mr. Devine has been the Project Manager for the relicensing of the 200 MW Don Pedro Project located on the Tuolumne River in California's Central Valley. In addition to hydroelectric generation, the Don Pedro Reservoir provides 2 million acre-feet of water storage for water supply, flood control and irrigation purposes which contributes \$4 billion/year of economic benefit to the Central Valley region of CA. His role as Project Manager includes overseeing and directing study plan development, study execution and reporting, and license application development, and NEPA document preparation. The relicensing process has included the planning and completion of over 30 studies, 20 Workshops with relicensing participants, and development of the preferred plan for future operation of the Project over the next 40 to 50 years.

York Haven Hydroelectric Project, York Haven Power Company, LLC (Olympus Power Company), Pennsylvania

Project Lead for the relicensing of the York Haven Project located on the Susquehanna River approximately 17 miles downstream of Harrisburg, Pennsylvania. The Project includes 20 generating units with a combined, authorized capacity of 19.65 MW. John served as both strategic advisor and project manager for the relicensing of this Project under FERC's Integrated Licensing Process (ILP). John served as strategic advisor on all licensing documents including Notice of Intent (NOI), Pre-Application Document (PAD), Proposed and Revised Study Plans, conducting initial field studies (as well as additional studies requested by the Resource Agencies), Draft License Application (April 2012) and the Final License Application (FLA) (August 2012). The FLA was the culmination of a comprehensive, collaborative, multi-year effort by York Haven Power Company with numerous federal and state agencies. John also negotiated and executed an Offer of Settlement with the Resource Agencies addressing fish passage at the Project. The executed Offer of Settlement requires the construction of a nature-like fishway (NLF) at the Project.

Board of Consultants, Brookfield Renewable Power, Review of the Remote Control Operations

In 2014, FERC ordered Brookfield Renewable Power to retain a Board of Consultants to review its remote control operations of its over 100 hydropower facilities. Mr. Devine led the Board of Consultants review, including the conduct of inspections and interviews with local and remote control operators. Mr. Devine developed a method for performance assessment and led the production of the final report, which was reviewed and accepted by FERC in early 2015.

Wells Project, Douglas County PUD, Washington

Lead Strategic Adviser for this 800 MW hydroelectric project on the Columbia River undergoing relicensing using the Integrated Licensing Process (ILP). John worked with Douglas PUD's relicensing core team and the Strategic Relicensing

Committee.

Tacoma Project, Xcel Energy, Colorado

Project Lead for all aspects of the relicensing of Xcel Energy's (Public Service Co. of Colorado) Tacoma Project in the San Juan Mountains of southwest Colorado. The Tacoma Project was one of the "pioneer" projects using FERC's ILP. John served as both strategic advisor and project manager for this project which involved numerous diversion dams and watersheds to develop an operating head of nearly 1,100 feet.

Ames Project, Xcel Energy, Colorado

Project Lead for all aspects of the relicensing of Xcel Energy's (Public Service Co. of Colorado) Ames Project on the Lake Fork and South Fork of the San Miguel River near Telluride, Colorado. The Ames Project was one of the "pioneer" projects using FERC's ILP. John served as both strategic advisor and project manager for this project in southwest Colorado. The Ames Project has the official distinction of being the first project in the world to generate and transmit A.C. power for commercial use. It was originally built in 1894 using theories developed by Tesla, the pioneer in A.C. power generation and transmission.

Cabin Creek Hydro Project, Xcel Energy, Colorado

Project Lead for Xcel Energy's relicensing of its 324 MW Cabin Creek Pumped Storage Project located on South Clear Creek and Cabin Creek near the Town of Georgetown in Clear Creek County, Colorado. Initial efforts include strategic planning for the ILP, recommendations for stakeholder outreach and stakeholder meetings, relicensing communications including the development of a Project website, the preparation of the NOI and PAD and related information (study scoping, issue identification) and project management tasks.

Toledo Bend Project, Sabine River Authority of Texas and the Sabine River Authority of Louisiana, Texas and Louisiana

Lead Strategic Advisor for the relicensing of this 80 MW project located on the border of Texas and Louisiana on the Sabine River. The Toledo Bend Reservoir is the largest man-made body of water in the southern United States and the fifth largest in the United States. The hydroelectric facility at Toledo Bend is a joint-licensed facility operated by Entergy Gulf States, Inc. (Entergy-TX), with the power purchased by Entergy-TX, Entergy Louisiana, LLC, and Cleco Power LLC. Mr. Devine led negotiations on downstream aquatic resource issues resulting in a comprehensive Aquatic Resources Agreement with federal and state resource agencies.

Yadkin Pee Dee River Project, Progress Energy, North and South Carolina

Project Manager and Lead Negotiator for Progress Energy's relicensing of its 24 MW Blewett development and 84 MW Tillery development on the Pee Dee River, the largest river in North Carolina. John served as lead relicensing strategic advisor to Progress Energy and was responsible for relicensing process design which is a cooperative, hybrid-traditional design involving over 40 stakeholders. Responsible for all environmental, engineering, modeling, document preparation, strategic planning, and negotiations for these two peaking and load-following stations. Issues included upstream and downstream anadromous fish passage, instream flow, water quality, resident fish, shoreline management, and recreation. A four-development hydro project located immediately upstream underwent a concurrent relicensing. Major studies by HDR included an instream flow study covering 80 miles of river downstream of the Blewett facility (most downstream dam on the Pee Dee River).

Priest Rapids Project, Grant County PUD, Washington

Lead Strategic Planning Consultant for the relicensing of Grant PUD's two-development 2,100 MW Priest Rapids Project on the Columbia River. The Priest Rapids Project is the largest, conventional, FERC-licensed project in the United States. John served as the primary relicensing process strategy advisor to Grant PUD for this project. The Project is Grant PUD's only generating resource, and is especially critical to Grant PUD and the entire population of Grant County. Responsibilities included serving as advisor to senior staff and Commissioners on FERC policy, process design, and strategic issues, including competition from another party for the Project in which Grant PUD prevailed. From developing, planning, and strategy guidance tools (Issue Assessment Documents, Outcome Assessments, and FERC-balancing analysis) to exhibit preparation (A, B, C, D, E1, E2, E5, E9, F, G, and H), John was essentially dedicated to this significant project for over four years. He prepared a customized approach to Exhibits B and D as befitted the size and importance of the project, completed the detailed economic analysis and resource balancing rationale, and authored the critical exhibits. John was also Lead Editor, responsible for the internal consistency of this 1,000+ page application.

Catawba-Wateree Project, Duke Power, North and South Carolina

Member of Licensee Duke Power's internal Core Team responsible for strategy development and preparation for the relicensing of this 11-development, 760 MW hydro project covering over 60 miles of the Catawba and Wateree Rivers in North and South Carolina. Advised on internal organization, schedule, relicensing process design, stakeholder participation, issue assessment, and economic analysis. HDR served as Lead Consultant.

Upper American River Project, Sacramento Municipal Utility District, California

Advisory team member for the relicensing of this 1,000 MW+ critical hydro system for Sacramento Municipal Utility District on the South Fork American River (and tributaries). The Project consists of 11 dams, eight powerhouses, and transmission lines primarily located in U.S. Forest Service Lands. Conventional facilities exceed 680 MW and a new 400 MW pumped storage project is being proposed. Responsibilities included conducting benchmarking studies, relicensing process design, strategic issues review and assessment, settlement process advice, and review of key exhibits. HDR served as Lead Consultant.

Nantahala Power Projects, North Carolina

Member of the Licensee's internal Core Team related to process design, settlement agreement, FERC policy, and regulatory matters for Nantahala Power's three FERC licenses involving 10 developments and 95 MW. FERC Relicensing of the Seboomook, Canada Falls, Ragged Lake, and Caucomgomoc Developments, Great Northern Paper, West Branch Penobscot River Drainage, Maine Project Manager for the FERC relicensing of four storage impoundments for Great Northern Paper in northern Maine. Responsibilities included: project management; agency presentations; stakeholder group presentations; development of detailed study plans; oversight and coordination of field work including Delphi instream flow assessments for over 20 miles of river; reservoir fluctuation studies and related impact assessments; and development of Second Stage Consultation document. He was also part of GNP's strategic planning team including Stakeholder group settlement discussions and development of a comprehensive water management plan.

New England Wind Energy Station (Newes), Kennetech Windpower, Maine

Project Manager for the planning, preliminary engineering, environmental studies, and state and federal permitting for this 110 MW wind plant in the Boundary Mountains of Maine. Newes was the first major wind project to be proposed in Maine. All permits were successfully acquired. Major studies included radar-assisted studies of raptor and neotropical songbird migrations.

**Various Hydro Projects, Great Northern Paper Company, Millinocket, Maine
Acted as Project Manager for the following work for GNP:**

- Investigation of upgrade potential and conversion from 40 to 60 cycle for the 24 MW Weldon Project;
- Oversight of study and design of improvements to Ripogenus Dam spillway gate;
- Certified Inspector for all four of GNP's licensed hydro projects which include 11 dams and six generating stations; and
- Oversight of design of rubber dam to replace flashboards at Stone Dam.

Twenty-two Hydro Projects in New York State, Niagara Mohawk Power Corporation

Expert Witness for NMPC in dealing with the long-term expected performance of 22 separate hydro projects in upstate New York. Provided analysis and expert testimony at a bench trial before the New York Supreme Court.

Project Manager, Peer Review, Duke Power Company

Served as Project Manager for a peer review of the scope and design concept for Duke Power's comprehensive HydroVision upgrade program involving 17 of their hydroelectric stations ranging in size from 10 MW to 350 MW.

Worumbo Hydroelectric Project, Design and Construction Services, Androscoggin River, Maine

Project Engineer for the layout, design, and construction oversight of this two-unit, 19 MW, \$40 million project. Personally completed the hydraulic layout of all facilities including powerhouse intake for two-unit bulb-turbines, spillways, and upstream and downstream fish passage facilities. Powerhouse was located along the east bank remote from the main channel. Given that bulb-turbine performance had been documented to be highly sensitive to approach flow geometry, project flow conditions were first numerically studied, then subject of physical modeling to ensure adequate intake performance and flow distribution at the intake. Personally responsible for numerical modeling approach, specifying physical model, oversight of construction of physical model, interpretation of results, and resulting final design of intake balancing hydraulic performance and cost of construction. The bulb-turbines were subsequently subjected to a full field performance test and found to meet performance expectations.

Hydro-Kennebec Project, Feasibility Study, Scott Paper Company, Kennebec River, Maine

Project Engineer responsible for hydraulic layout for entire 16.8 MW project including difficult powerhouse configuration in a highly limited site. Layout of powerhouse intake configuration and geometry was based solely on numerical analyses and judgment. Project was later physically modeled to optimize intake which resulted in no changes to the intake as designed. Turbine performance was field tested and found to meet expected efficiency.

Lockwood Hydro Project, Design Services, Central Maine Power, Kennebec River, Maine

Engineer responsible for layout of new powerhouse located at the end of, and in the west corner of, an existing canal. Canal had experienced severe sedimentation problems in the past. New powerhouse layout and existing canal were physically modeled to develop hydraulic design parameters. Final design of canal improvements and new powerhouse eliminated sedimentation problem and provided satisfactory performance of intake.

Swan Falls Project, Design Services, Idaho Power Company, Snake River, Idaho

Special Consultant for the hydraulic design of the powerhouse intake of the 21 MW, two-unit Swan Falls Expansion Project. Responsibilities included review of previous hydraulic studies; identification of needed improvements; design, specification, and interpretation of physical model results; and final hydraulic layout of the powerhouse intake.

Other responsibilities included:

- Equipment selection; particularly speed increaser specification, design, and construction;
- Major equipment specification and hydraulic design criteria;
- Hydraulic design of intake;
- Mechanical design criteria for trashracks, intake gates, and draft tube gates;
- Equipment evaluation and energy analysis; and
- Adequacy of Vendor's hydraulic model test for the turbine.

Monroe Street Hydroelectric Development, Hydraulic Modeling Consultation, Washington Water Power Company, Spokane River, Washington

Consultant to Washington Water Power Company (now Avista) providing assistance with evaluation of options for improving the existing intake at the Monroe Street HED on the Spokane River. Specific duties included assistance with interpretation of physical model results related to approach flows and headloss.

Augusta Hydroelectric Project, Kennebec River, Edwards Manufacturing Company, Maine

Project Manager and Lead Engineer for all engineering investigations and environmental studies in support of the relicensing of the Augusta Hydro Project on the Kennebec River in Maine. These responsibilities include the lead technical role for the investigation of upgrade options including rehabilitation of existing plant facilities, expansion of existing power canal, and installation of an additional 8 MW of capacity, as well as development and integration of extensive fish passage facilities consisting of state-of-the-art trap and truck facilities for Atlantic salmon, shad, and alewife, as well as sea-run trout and striped bass. Mr. Devine was also responsible for scoping and managing the environmental studies including: aquatic and terrestrial habitat evaluation studies; archaeological investigations; water quality assessment including macroinvertebrate sampling and analysis; recreational studies; wetland studies; and rare and endangered species investigations.

Mr. Devine was also involved in the conduct of the entire agency consultation program, a task made extremely difficult after the Governor of the State of Maine proposed to remove the dam to enhance fisheries. John was involved in the legislative hearings in opposition to the Governor's proposal and provided expert

testimony on project environmental, engineering, and economic issues.

Connecticut River, Riverbank Master Plan, Northfield Mountain Pumped Storage Project

Project Manager for the development of a Master Plan to address the occurrence of erosion along the banks of the Connecticut River in the 22-mile-long Turners Falls impoundment which acts as the lower reservoir for NUSCO's 1,080 MW Northfield Mountain Pumped Storage Project. The Connecticut River is the largest river in New England, and Northfield Mountain is the largest hydroelectric plant in New England.

HDR was responsible for conducting, and Mr. Devine for managing, all engineering and environmental investigations in support of developing the Master Plan to cover 44 miles of riverbank between Turners Falls Dam in Turners Falls, Massachusetts to Vernon Dam in Vermont and New Hampshire. Work involved environmental investigations of wetlands, unique flora and fauna habitats, rare and endangered species, visual/aesthetic considerations, recreational issues, and extensive public and agency consultation and participation, including resource agencies in Massachusetts, Vermont, and New Hampshire. The work also included the engineering investigations of the causes of erosion and potential structural and bioengineering stabilization options. All data was entered, organized, and analyzed using HDR's ARC/INFO GIS system for the creation of a long-term manageable database for program implementation, monitoring, and reporting.

Second 345 kV Tie Line to New Brunswick Power

Project Manager for all the environmental, geotechnical, agency coordination, and public participation programs for Bangor Hydro's Second 345 kV Tie Line Project located in Washington, Hancock, and Penobscot Counties. This project involves the installation of 85 miles of transmission line including several river crossings. Mr. Devine was involved in route selection and directed, coordinated, and managed all environmental studies including wetlands avoidance and mitigation planning, visual/aesthetic analysis, recreational impact analysis, consideration of EMF issues, rare and endangered species, wildlife habitat, and agency consultation. HDR was responsible for coordination of all subconsultants and all environmental permitting including the following:

- Federal
 - D.O.E. EIS and Presidential Permit (HDR produced the Environmental Report) for International Crossing, Corps of Engineers Section 10 and 404 permits, FAA approval at two airports.
- State of Maine
 - Site Location of Development
 - N.R.P.A.
 - L.U.R.C. Utility Line Permit
 - Water Quality Certification
 - D.O.T. Crossings
- Local Permits
 - Zoning approval in twelve towns

Detailed Feasibility Studies, Nine Hydroelectric Sites, Niagara Mohawk Power Corporation, Syracuse, New York

Principal Engineer for detailed feasibility studies for six hydroelectric sites on the Oswego River, and three on the Black River in north central New York state. The

studies included detailed evaluations of life extension of existing equipment, upgrading existing equipment, and the potential for adding new generating capabilities at these sites. Included in one of the Black River Developments was an assessment of the cost to retrofit downstream fish passage facilities at the site. It summarized the results and recommendations in a report to Niagara Mohawk for use in determining which alternative to propose in the relicensing application for the sites at FERC.

Worumbo Hydroelectric Project, Combustion Engineering, Lisbon Falls, Maine

Principal Engineer on this 17 MW project on the Androscoggin River, responsible for preparation of FERC license documents, investigation of alternate site layouts, preparation of project specifications, completion of hydraulic design criteria, preparation of general arrangement drawings, detailed site layout, and responsible for the overall project engineering functions for the design of the new facilities, which included a new concrete gated and un-gated spillway, rehabilitated timber crib dam section, new powerhouse, and upstream and downstream fish passage facilities. The upstream facilities consisted of a two-entrance collection gallery with a low-head, tailrace fed attraction water pumping facility, a mechanical lift, and a viewing facility. The downstream facilities included three entrance weirs and a collection flume integral with the powerhouse intake, and a downstream migrant pipe to allow passage to the tailrace area. The facilities were designed for Atlantic salmon, American shad and alewife.

West Enfield Hydroelectric Project, Bangor-Pacific Hydro Associates, West Enfield, Maine

Responsible department head and technical lead for the feasibility investigation, FERC relicensing, preparation of turbine generator equipment specifications, and preliminary design of primary waterways including power canal and tailrace for this 22 MW project on the Penobscot River. Evaluations included an analysis of 3.5 MW of existing capacity and the costs of upgrading that capacity versus the incremental energy that would be obtained through its continued use. Recommended plan of development included a new powerhouse, new spillway, and expansion of the existing hydraulic capacity from 2,500 cfs to 14,000 cfs. Also directly responsible for the layout and preliminary design of three, 26-ft. by 26-ft. radial gates, the powerhouse, and tailrace. The expansion also included design of a three-entrance collection gallery with a tailrace feed, attraction water pumping system with a state-of-the-art vertical slot upstream fish passage facility, including fish viewing facilities. The passage facilities also included a three-weir collection system and flume integral with the intake, along with a downstream migrant pipe to the tailrace. The facilities were designed for American shad, Atlantic salmon and alewife.

Relicensing Benchmarking Study (2001/2002)

Project Lead for performance of an assessment of 16 settlement agreements for three clients with upcoming relicensing projects. Developed a "Lessons Learned" summary and full economic evaluations of the final settlement agreements and an evaluation of implementation challenges.

Basin Mills Hydroelectric Project, Bangor Hydro-Electric Company, Orono, Maine

Responsible department head for all feasibility investigations and FERC licensing for a project planned by Bangor Hydro-Electric Company. The project encompasses two dams with a total rated capacity of 54 MW, and involves the

construction of a new dam on the Penobscot River near Orono, Maine. Feasibility investigations included hydrologic and hydraulic evaluations, geotechnical studies, preliminary layout of spillways and powerhouses, and technical analysis of potential environmental impacts.

Pontook Hydroelectric Project, Combustion Engineering, Dummer, New Hampshire

Responsible division head for design of the Pontook Hydroelectric Project in Dummer, New Hampshire. Lead engineer for defining hydrologic and hydraulic design criteria, layout of project facilities, including a 6,000-foot-long power canal, new timber crib dam, canal headworks, penstock intake, penstocks, powerhouse, and tailrace. Project is rated at 11.4 MW at 58 feet of net head.

Hydro-Kennebec Project, Scott Paper Company, Winslow, Maine

Responsible engineer for feasibility studies and responsible department manager for preparation of FERC license application. License application was accepted without deficiency upon first filing. Project included assessment of existing timber crib dam for use as part of the expanded project. The project is located on the Kennebec River and is rated at 15 MW.