

# LOW IMPACT HYDROPOWER INSTITUTE

## CERTIFICATION QUESTIONNAIRE

APRIL, 2014 REVISION

| Background Information                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| 1) Name of the Facility as used in the FERC license/exemption.                                                                                                                                                                                                                                                                                                                                           | Deer Island Hydro Project                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2) Applicant's name, contact information and relationship to the Facility. Please use the Project Contact Form in Appendix D.                                                                                                                                                                                                                                                                            | <p>Pamela Heidell (MWRA liaison with LIHI)<br/> Massachusetts Water Resources Authority (MWRA)<br/> 100 First Ave, Charlestown Navy Yard<br/> Boston, MA 02129<br/> (617) 788 1102</p> <p>Kristen Patneaude, MWRA (Energy Program Manager)<br/> Deer Island Wastewater Treatment Plant<br/> 190 Tafts Ave<br/> Boston, MA<br/> (617) 660 7871</p>                                                                                   |
| 3) Location of Facility including (a) the state in which Facility is located; (b) the river on which Facility is located; (c) the river-mile location of the Facility dam; (d) the river's drainage area in square miles at the Facility intake; (e) the location of other dams on the same river upstream and downstream of the Facility; and (f) the exact latitude and longitude of the Facility dam. | <p>The facility is a hydroelectric conduit facility at the Deer Island Wastewater Treatment Plant (DITP). DITP is not located on a river; hence there is no drainage area. The hydroelectric facility discharges into a shaft which conveys wastewater to 9.5 mile long outfall tunnel 120 feet below the surface that discharges into the deeper waters of Massachusetts Bay. The hydroelectric facility is located at 70° 57'</p> |

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|                                                                                      | 26", 42° 21' 15" longitude and latitude. The location of DITP and the outfall tunnel are shown in Attachment A.                                                                                                                                   |
| 4) Installed capacity.                                                               | 2000 kW                                                                                                                                                                                                                                           |
| 5) Average annual generation.                                                        | 5,000,000 kWh                                                                                                                                                                                                                                     |
| 6) Regulatory status.                                                                | FERC Conduit Exemption # 11412 issued November 9, 1993 (Facility brought on line in 2001). See attached FERC Order Granting Exemption (Attachment B)                                                                                              |
| 7) Reservoir volume and surface area measured at the normal maximum operating level. | Not Applicable (NA). Inflow to hydro units is treated wastewater.                                                                                                                                                                                 |
| 8) Area occupied by non-reservoir facilities (e.g., dam, penstocks, powerhouse).     | Powerhouse is approximately 100' by 100'. The Powerhouse is located within the footprint of DITP. The layout of DITP showing the location of the hydro facility is shown in Attachment C, the Project Description.                                |
| 9) Number of acres inundated by the Facility.                                        | No inundation is associated with the facility.                                                                                                                                                                                                    |
| 10) Number of acres contained in a 200-foot zone extending around entire reservoir.  | No impoundment/reservoir is associated with the facility.                                                                                                                                                                                         |
| 11) Contacts for Resource Agencies and non-governmental organizations                | Attachment D includes a list of resource agencies as well as letters from resource agencies that commented on the FERC exemption application. As the letters indicate, the nature of the conduit facility posed no concerns to resource agencies. |
| 12) Description of the Facility, its mode of operation (i.e., peaking/run of         | Please see Attachment C, a description of this                                                                                                                                                                                                    |

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| river) and photographs, maps and diagrams.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | conduit hydroelectric facility and its mode of operation (harnessing energy from treated wastewater effluent as its drops from one elevation in the DITP (the disinfection basins) to another location (and effluent channel to an outfall shaft and tunnel). |
| <b>Questions for "New" Facilities Only:</b><br>If the Facility you are applying for is "new" (i.e., an existing dam that added or increased power generation capacity after August of 1998) please answer the following questions to determine eligibility for the program.                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                               |
| 13) When was the dam associated with the Facility completed?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                               |
| 14) When did the added or increased generation first generate electricity? If the added or increased generation is not yet operational, please answer question 18 as well.                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                               |
| 15) Did the added or increased power generation capacity require or include any new dam or other diversion structure?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                               |
| 16) Did the added or increased capacity include or require a change in water flow through the facility that worsened conditions for fish, wildlife, or water quality (for example, did operations change from run-of-river to peaking)?                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                               |
| 17 (a) Was the existing dam recommended for removal or decommissioning by resource agencies, or recommended for removal or decommissioning by a broad representation of interested persons and organizations in the local and/or regional community prior to the added or increased capacity?<br><br>(b) If you answered "yes" to question 17(a), the Facility is not eligible for certification, unless you can show that the added or increased capacity resulted in specific measures to improve fish, wildlife, or water quality protection at the existing dam. If such measures were a result, please explain. |                                                                                                                                                                                                                                                               |

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| <p>18 (a) If the added or increased generation is not yet operational, has the increased or added generation received regulatory authorization (e.g., approval by the Federal Energy Regulatory Commission)? If not, the facility is not eligible for consideration; and</p> <p>(b) Are there any pending appeals or litigation regarding that authorization? If so, the facility is not eligible for consideration.</p> |                                                                                        |
| <p><b>A. Flows</b></p> <p>1) Is the Facility in Compliance with Resource Agency Recommendations issued after December 31, 1986 regarding flow conditions for fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations) for both the reach below the tailrace and all bypassed reaches?</p>           | <p>PASS</p> <p>YES = Pass, Go to B<br/>N/A = Go to A2</p> <p>FAIL</p> <p>NO = Fail</p> |
| <p>2) If there is no flow condition recommended by any Resource Agency for the Facility, or if the recommendation was issued prior to January 1, 1987, is the Facility in Compliance with a flow release schedule, both below the tailrace and in all bypassed reaches, that at a minimum meets Aquatic Base Flow standards or "good" habitat flow standards calculated using the Montana-Tennant method?</p>            | <p>YES = Pass, go to B<br/>NO = Go to A3</p>                                           |
| <p>3) If the Facility is unable to meet the flow standards in A.2., has the Applicant demonstrated, and obtained a letter from the relevant Resource Agency confirming that demonstration, that the flow conditions at the Facility are appropriately protective of fish, wildlife, and water quality?</p>                                                                                                               | <p>YES = Pass, go to B<br/>NO = Fail</p>                                               |
| <p><b>B. Water Quality</b></p>                                                                                                                                                                                                                                                                                                                                                                                           | <p>PASS</p> <p>FAIL</p>                                                                |

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| 1) Is the Facility either:<br>a) In Compliance with all conditions issued pursuant to a Clean Water Act Section 401 water quality certification issued for the Facility after December 31, 1986? Or<br>b) In Compliance with the quantitative water quality standards established by the state that support designated uses pursuant to the federal Clean Water Act in the Facility area and in the downstream reach? | YES = Go to B2                                                                                                                                                                    | NO = Fail |
| 2) Is the Facility area or the downstream reach currently identified by the state as not meeting water quality standards (including narrative and numeric criteria and designated uses) pursuant to Section 303(d) of the Clean Water Act?                                                                                                                                                                            | YES = Go to B3<br>NO = Pass                                                                                                                                                       |           |
| 3) If the answer to question B.2 is yes, has there been a determination that the Facility does not cause, or contribute to, the violation?                                                                                                                                                                                                                                                                            | YES = Pass                                                                                                                                                                        | NO = Fail |
| <b>C. Fish Passage and Protection</b>                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                   |           |
| 1) Are anadromous and/or catadromous fish present in the Facility area or are they known to have been present historically?                                                                                                                                                                                                                                                                                           | PASS<br>YES = Go to C2<br>NO = Go to C6<br><br>Not Applicable, Facility is a Conduit Facility for a wastewater treatment plant that discharge more than nine miles out in MA Bay. | FAIL      |
| 2) Is the Facility in Compliance with Mandatory Fish Passage Prescriptions                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                   |           |



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| for upstream and downstream passage of anadromous and catadromous fish issued by Resource Agencies after December 31, 1986?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | YES = Go to C6<br>N/A = Go to C2                                                                                             | NO = Fail                         |
| <p>3) Are there historic records of anadromous and/or catadromous fish movement through the Facility area, but anadromous and/or catadromous fish do not presently move through the Facility area (e.g., because passage is blocked at a downstream dam or the fish no longer have a migratory run)?</p> <p>a) If the fish are extinct or extirpated from the Facility area or downstream reach, has the Applicant demonstrated that the extinction or extirpation was not due in whole or part to the Facility?</p> <p>b) If a Resource Agency Recommended adoption of upstream and/or downstream fish passage measures at a specific future date, or when a triggering event occurs (such as completion of passage through a downstream obstruction or the completion of a specified process), has the Facility owner/operator made a legally enforceable commitment to provide such passage?</p> | <p>YES = Go to C2a<br/>NO = Go to C3</p> <p>YES = Go to C2b<br/>N/A = Go to C2b</p> <p>YES = Go to C5<br/>N/A = Go to C3</p> | <p>NO = Fail</p> <p>NO = Fail</p> |
| <p>4) If, since December 31, 1986:</p> <p>a) Resource Agencies have had the opportunity to issue, and considered issuing, a Mandatory Fish Passage Prescription for upstream and/or downstream passage of anadromous or catadromous fish (including delayed installation as described in C.3.a above), and</p> <p>b) The Resource Agencies declined to issue a Mandatory Fish Passage Prescription,</p> <p>c) Was a reason for the Resource Agencies' declining to issue a Mandatory Fish Passage Prescription one of the following: (1) the</p>                                                                                                                                                                                                                                                                                                                                                    | <p>NO = Go to C6<br/>N/A = Go to C4</p>                                                                                      | <p>YES = Fail</p>                 |

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| <p>technological infeasibility of passage, (2) the absence of habitat upstream of the Facility due at least in part to inundation by the Facility impoundment, or (3) the anadromous or catadromous fish are no longer present in the Facility area and/or downstream reach due in whole or part to the presence of the Facility?</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                         |                  |  |
| <p>5) If C4 was not applicable:</p> <p>a) Are upstream and downstream fish passage survival rates for anadromous and catadromous fish at the dam each documented at greater than 95% over 80% of the run using a generally accepted monitoring methodology?</p> <p>Or</p> <p>b) If the Facility is unable to meet the fish passage standards in 5.a, has the Applicant either i) demonstrated, and obtained a letter from the U.S. Fish and Wildlife Service or National Marine Fisheries Service confirming that demonstration, that the upstream and downstream fish passage measures (if any) at the Facility are appropriately protective of the fishery resource, or ii) committed to the provision of fish passage measures in the future and obtained a letter from the U.S. Fish and Wildlife Service or the National Marine Fisheries Service indicating that passage measures are not currently warranted?</p> | <p>YES = Go to C6</p>                                                                                                                                                   | <p>NO = Fail</p> |  |
| <p>6) Is the Facility in Compliance with Mandatory Fish Passage Prescriptions for upstream and/or downstream passage of Riverine fish?</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <p>YES = Go to C7<br/>N/A = Go to C7</p> <p>N/A. Facility is a Conduit Facility for a wastewater treatment plant that discharge more than nine miles out in MA Bay.</p> | <p>NO = Fail</p> |  |

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| 7) Is the Facility in Compliance with Resource Agency Recommendations for Riverine, anadromous and catadromous fish entrainment protection, such as tailrace barriers?                                                                                                                                                                                                  | YES = Pass, go to D<br>N/A = Pass, go to D                                                                              | NO = Fail                 |
| <b>D. Watershed Protection</b>                                                                                                                                                                                                                                                                                                                                          |                                                                                                                         |                           |
| 1) Is there a buffer zone dedicated for conservation purposes (to protect fish and wildlife habitat, water quality, aesthetics and/or low-impact recreation) extending 200 feet from the average annual high water line for at least 50% of the shoreline, including all of the undeveloped shoreline?                                                                  | PASS<br><br>YES = Eligible for 3 extra years of certification; Go to D4<br>N/A                                          | FAIL<br><br>NO = Go to D2 |
| 2) Has the Facility owner/operator established an approved watershed enhancement fund that: 1) could achieve within the project's watershed the ecological and recreational equivalent of land protection in D.1, and 2) has the agreement of appropriate stakeholders and state and federal resource agencies?                                                         | YES = Eligible for 3 extra years of certification; Go to D4<br>N/A (conduit facility using treated wastewater as flow). | NO = Go to D3             |
| 3) Has the Facility owner/operator established through a settlement agreement with appropriate stakeholders, with state and federal resource agencies agreement, an appropriate shoreland buffer or equivalent watershed land protection plan for conservation purposes (to protect fish and wildlife habitat, water quality, aesthetics and/or low impact recreation)? | YES = Go to D4                                                                                                          | NO = Go to D4             |
| 4) Is the facility in compliance with both state and federal resource agencies recommendations in a license approved shoreland management plan regarding protection, mitigation or enhancement of shorelands surrounding the project?                                                                                                                                   | YES = Pass, go to E<br>N/A = Pass, go to E                                                                              | No = Fail                 |



| <b>E. Threatened and Endangered Species Protection</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>PASS</b>                          | <b>FAIL</b> |
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| 1) Are threatened or endangered species listed under state or federal Endangered Species Acts present in the Facility area and/or downstream reach?                                                                                                                                                                                                                                                                                                                                                                                                                               | YES = Go to E2<br>NO = Pass, go to F |             |
| 2) If a recovery plan has been adopted for the threatened or endangered species pursuant to Section 4(f) of the Endangered Species Act or similar state provision, is the Facility in Compliance with all recommendations in the plan relevant to the Facility?                                                                                                                                                                                                                                                                                                                   | YES = Go to E3<br>N/A = Go to E3     | NO = Fail   |
| 3) If the Facility has received authorization to incidentally Take a listed species through: (i) Having a relevant agency complete consultation pursuant to ESA Section 7 resulting in a biological opinion, a habitat recovery plan, and/or (if needed) an incidental Take statement; (ii) Obtaining an incidental Take permit pursuant to ESA Section 10; or (iii) For species listed by a state and not by the federal government, obtaining authorization pursuant to similar state procedures; is the Facility in Compliance with conditions pursuant to that authorization? | YES = Go to E4<br>N/A = Go to E5     | NO = Fail   |
| 4) If a biological opinion applicable to the Facility for the threatened or endangered species has been issued, can the Applicant demonstrate that:<br><br>a) The biological opinion was accompanied by a FERC license or exemption or a habitat conservation plan? Or<br><br>b) The biological opinion was issued pursuant to or consistent with a recovery plan for the endangered or threatened species? Or<br><br>c) There is no recovery plan for the threatened or endangered species under active development by the relevant Resource Agency? Or                          | YES = Pass, go to F                  | NO = Fail   |

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| d) The recovery plan under active development will have no material effect on the Facility's operations?                                                                                                                                                                                                                                                                                                                               |                                          |  |                   |
| 5) If E.2 and E.3 are not applicable, has the Applicant demonstrated that the Facility and Facility operations do not negatively affect listed species?                                                                                                                                                                                                                                                                                | YES = Pass, go to F                      |  | NO = Fail         |
| <b>F. Cultural Resource Protection</b>                                                                                                                                                                                                                                                                                                                                                                                                 |                                          |  |                   |
| 1) If FERC-regulated, is the Facility in Compliance with all requirements regarding Cultural Resource protection, mitigation or enhancement included in the FERC license or exemption?                                                                                                                                                                                                                                                 | PASS                                     |  | FAIL              |
| 2) If not FERC-regulated, does the Facility owner/operator have in place (and is in Compliance with) a plan for the protection, mitigation or enhancement of impacts to Cultural Resources approved by the relevant state or federal agency or Native American Tribe, or a letter from a senior officer of the relevant agency or Tribe that no plan is needed because Cultural Resources are not negatively affected by the Facility? | YES = Pass, go to G<br>N/A = Go to F2    |  | NO = Fail         |
| <b>G. Recreation</b>                                                                                                                                                                                                                                                                                                                                                                                                                   |                                          |  |                   |
| 1) If FERC-regulated, is the Facility in Compliance with the recreational access, accommodation (including recreational flow releases) and facilities conditions in its FERC license or exemption?                                                                                                                                                                                                                                     | PASS<br>YES = Go to G3<br>N/A = Go to G2 |  | FAIL<br>NO = Fail |
| 2) If not FERC-regulated, does the Facility provide recreational access, accommodation (including recreational flow releases) and facilities, as Recommended by Resource Agencies or other agencies responsible for recreation?                                                                                                                                                                                                        | YES = Go to G3                           |  | NO = Fail         |

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| 3) Does the Facility allow access to the reservoir and downstream reaches without fees or charges? | YES = Pass, go to H<br>N/A (facility is conduit facility)   | NO = Fail  |
| <b>H. Facilities Recommended for Removal</b>                                                       | PASS                                                        | FAIL       |
| 1) Is there a Resource Agency Recommendation for removal of the dam associated with the Facility?  | NO = Pass, Facility is Low Impact<br>N/A (conduit facility) | YES = Fail |