



RFP No. WTR076

PROFESSIONAL, TECHNICAL AND EXPERT SERVICES

**City of Portland, Oregon
April 20, 2009**

REQUEST FOR PROPOSALS

for

Mt. Tabor Part 12 Dam Safety Inspection

PROPOSALS DUE: June 9, 2009 by 4:00 p.m.

Envelope(s) shall be sealed and marked with RFP # and Project Title.

Submit one (1) original and five (5) complete copies of the Proposal to:

Chris Herzog
City of Portland
Portland Water Bureau
Hydroelectric Power Section
Room 530
1120 SW Fifth Avenue
Portland, OR 97204-1975

Refer questions to:

Chris Herzog
Phone: (503) 823-1388
Fax: (503) 823-7533
Email: Cherzog@water.ci.portland.or.us

GENERAL INSTRUCTIONS AND CONDITIONS

DIVERSITY IN EMPLOYMENT AND CONTRACTING REQUIREMENTS

The City of Portland seeks to extend contracting opportunities to Minority Business Enterprises, Women Business Enterprises and Emerging Small Businesses (M/W/ESBs) in order to promote their economic growth and to provide additional competition for City contracts. Therefore, the City has established an overall 20% utilization goal in awarding PTE contracts to ESBs. No goal is set for the use of M/WBE firms, but the City is committed to ensuring that such firms receive opportunities and equal consideration to be awarded City PTE contracts.

ENVIRONMENTALLY PREFERABLE PROCUREMENT

In accordance with the City's Sustainable City Principles and the City's Sustainable Procurement Policy, the City of Portland values the use of products or services that minimize the negative human health and environmental impacts of City operations. Therefore, proposers are encouraged to incorporate environmentally preferable products or services into their responses wherever possible. "Environmentally preferable" means products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. This comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, or disposal of the product or service. To view the above City policies go to www.portlandonline.com and navigate to "Charter, Code & Policies Documents".

INVESTIGATION- The proposer shall make all investigations necessary to inform it regarding the service(s) to be performed under this request for proposal.

SPECIAL CONDITIONS - Where special conditions are written in the Request for Proposal, these special conditions shall take precedence over any conditions listed under the Professional, Technical and Expert Service "General Instructions and Conditions".

CLARIFICATION OF REQUEST FOR PROPOSAL- Proposers who request a clarification of the RFP requirements must submit questions in writing to the person(s) shown in the REFER QUESTIONS TO section on the cover of this RFP, or present them verbally at a scheduled pre-submittal conference, if one has been scheduled. The City must receive written questions no later than the date stated herein. The City will issue a response in the form of an addendum to the RFP if a substantive clarification is in order.

Oral instructions or information concerning the request for proposal given out by Bureau or Office managers, employees or agents to prospective proposers shall not bind the City.

ADDENDUM – Any change to this RFP shall be made by written addendum issued no later than 72 hours prior to the proposal due date. The City is not responsible for any explanation, clarification or approval made or given in any manner except by addendum.

COST OF PROPOSAL- This Request for Proposal does not commit the City to pay any costs incurred by any proposer in the submission of a proposal or in making necessary studies or designs for the preparation thereof, or for procuring or contracting for the services to be furnished under the request for proposal.

CANCELLATION – The City reserves the right to modify, revise or cancel this RFP. Receipt and evaluation of proposals or the completion of interviews do not obligate the City to award a contract.

LATE PROPOSALS- Proposals received after the scheduled closing time for filing will be returned to the proposer unopened.

REJECTION OF PROPOSALS- The City reserves the right to reject any or all responses to the Request for Proposal if found in the City's best interest to do so. In the City's discretion, litigation between the

City and a proposer shall be cause for proposal rejection, regardless of when that litigation comes to the City's attention and regardless how the consultant's proposal may have been scored. Proposals may also be rejected if they use subcontractors or subconsultants who are involved in litigation with the City. Proposers concerned about possible rejection on this basis should contact the City before submission of a proposal for a preliminary determination of whether its proposal will be rejected.

CITY OF PORTLAND BUSINESS LICENSE - Successful consultant shall obtain a current City of Portland Business License prior to initiation of contract and commencement of the work.

WORKERS COMPENSATION INSURANCE – the successful consultant shall be covered by Workers Compensation Insurance or shall provide evidence that State law does not require such coverage.

CERTIFICATION AS AN EEO AFFIRMATIVE ACTION EMPLOYER-

Proposers must be certified as Equal Employment Opportunity Affirmative Action Employers as prescribed by Chapter 3.100 of the Code of the City of Portland. The required documentation must be filed with the Bureau of Purchases, City of Portland, prior to contract execution.

EQUAL BENEFITS PROGRAM – Proposers must provide benefits to their employees with domestic partners equivalent to those provided to employees with spouses as prescribed by Chapter 3.100 of the Code of the City of Portland. The required documentation must be filed with the Bureau of Purchases, City of Portland, prior to contract execution.

CONFLICT OF INTEREST - A proposer filing a proposal thereby certifies that no officer, agent or employee of the City who has a pecuniary interest in this request for proposal has participated in the contract negotiations on the part of the City, that the proposal is made in good faith without fraud, collusion or connection of any kind with any other proposer of the same call for proposals, and that the proposer is competing solely in its own behalf without connection with or obligation to, any undisclosed person or firm.

CONFIDENTIALITY – All information submitted by proposers shall be public record and subject to disclosure pursuant to the Oregon Public Records Act (ORS 192.410 et seq.), except such portions of the proposals for which proposer requests exception from disclosure consistent with Oregon Law. Any portion of a proposal that the proposer claims constitutes a "trade secret" or is "confidential" must meet the requirements of ORS 192.501(2) and ORS 192.502(4). If the entire proposal is marked as constituting a "trade secret" or being "confidential," at the City's sole discretion, such a proposal may be rejected as non-responsive.

If a request to inspect the proposal is made, the City will notify the proposer of the request. If the City refuses to release the records, the proposer agrees to provide information sufficient to sustain its position to the District Attorney of Multnomah County, who currently considers such appeals. If the District Attorney orders that the records be disclosed, the City will notify the proposer in order for the proposer to take all appropriate legal action. The proposer further agrees to hold harmless, defend and indemnify the City for all costs, expenses and attorney fees that may be imposed on the City as a result of appealing any decision regarding the proposer's records.

The Purchasing Agent has the authority to waive minor irregularities and discrepancies that will not affect the competitiveness or fairness of the solicitation and selection process.

These Professional, Technical and Expert Services Request for Proposal "General Terms and Conditions" are not to be construed as exclusive remedies or as a limitation upon rights or remedies that may be or may become available under ORS Chapter 279.

PART I

CONTRACT REQUIREMENTS

SECTION A

GENERAL INFORMATION

1. INTRODUCTION

The City of Portland (City) Water Bureau strives to provide high quality water to enhance the public health and safety and contribute to the economic viability and livability of the Portland metropolitan region. We are a recognized leader among water service agencies across the country.

This project aligns with the Water Bureau's mission statement of providing reliable water service to customers as well as being responsible stewards of the public's water infrastructure and natural resources.

2. BACKGROUND

The City of Portland Oregon's Water Bureau (City) operates three open drinking water reservoirs (Reservoirs No's. 1, 5, and 6) located in Mt. Tabor Park on the southeast side of Portland. These reservoirs are included as a part of the City's Mt. Tabor Hydroelectric Project and are under the jurisdiction of the Federal Energy Regulatory Commission (FERC).

Reservoir No. 1 is a 12-million gallon concrete lined reservoir which is impounded by a 40-foot high by 300 foot long concrete gravity dam with a large downslope earthen buttress.

Reservoir No. 5 is a 50-million gallon concrete and membrane lined reservoir which was constructed in a natural ravine on the western side of Mt. Tabor with a closure dam across the mouth of the ravine. That closure dam is a composite structure consisting of a 55-foot high by 360 foot long reinforced concrete counterfort retaining wall that is buttressed by a downslope earthfill embankment.

Reservoir No. 6 is rectangular in shape and is divided into two sub-basins by a 19-foot high central reinforced concrete dividing wall. The two sub-basins are lined with concrete panels and have capacities of 31.9 million gallons each. The dam for Reservoir No. 6 is a homogenous earthfill embankment up to 28 feet in height and 2,100 feet in length.

The City is required to submit the Sixth Mt. Tabor Independent Consultant's Part 12 Dam Safety Inspection Report to the FERC by October 27, 2009. The Fourth Mt. Tabor Independent Consultant's Part 12 Report was completed in October 1999 and in December of 2005 a Potential Failure Modes Analysis (PFMA) was conducted for this project's facilities.

The Fifth Mt. Tabor Independent Consultant's Part 12 report and an accompanying Supporting Technical Information (STI) Document were then completed in April 2006 with references to the 2005 PFMA. The FERC has indicated that another PFMA will not be required as a part of this project. However, the FERC wishes to review the failure modes identified in the previous PFMA, evaluate the assigned categorizations, and discuss them with the successful Proposer as a part of this inspection project.

3. SCOPE OF WORK

The City of Portland's Water Bureau is seeking proposals from individuals, firms, or teams of consultants, hereafter called "Proposer(s)", with demonstrated experience in conducting Part 12 Dam Safety inspections and preparing inspection reports suitable for submission to the FERC. The City proposes to engage the successful Proposer for the following services:

- A. Conduct a review of all January 2005 – June 2009 operations, maintenance and surveillance records for the Mt. Tabor facilities.
- B. Conduct a review of the 2006 Mt Tabor Project PFMA report.
- C. Conduct a review of the 2006 STI Document.

- D. Provide recommended changes to STI document in light of a new site-specific Seismic Hazard Review and Crest Deformation Study which has been completed outside of this specification and is not part of this scope.
- E. Conduct a Part 12 Dam Safety Inspection and Review of the Mt. Tabor Hydroelectric Project reservoirs, dams, embankments, and all appurtenant piping, etc., excluding all generation, transformation and transmission equipment associated with the Mt. Tabor Hydroelectric Project and then report on their findings.

4. PROJECT FUNDING

The anticipated cost for the services described herein is \$40,000. The Proposer's proposal shall include the Proposer's true estimated cost to perform the work irrespective of the City's budgeted funds for this work.

5. TIMELINE FOR SELECTION

The following dates are proposed as a timeline for this project:

Deadline for submitting questions/clarification	May 28, 2009
Written proposals due at 4:00 p.m.	June 9, 2009
Announcement of short list Proposers	June 25, 2009
Interviews, if deemed necessary	July 2, 2009
Selection committee recommendation	July 9, 2009
Contract negotiation with successful Proposer	July 30, 2009
Notice to proceed – work begins	August 27, 2009

The City reserves the right to make adjustments to the above noted schedule as necessary.

SECTION B

WORK REQUIREMENTS

1. TECHNICAL OR REQUIRED SERVICES

The successful Proposer shall be responsible for the work necessary to review the Mt. Tabor Project's recent O&M data, the previous PFMA and STI, and then conduct a Part 12 Dam Safety Inspection of the Mt. Tabor Hydroelectric Project (Project) facilities including all three of the City's open Mt. Tabor Reservoirs. The successful Proposer shall perform the tasks listed below for this project:

- A. Review and report on City's most recent Surveillance Monitoring Plan and Surveillance Monitoring Reports for 2005 – June 2009 and all maintenance and operating records for the Mt. Tabor facilities for that same timeframe and report on their findings as part of the Part 12 Inspection Report.
- B. Participate with the FERC in a review of the most recent Potential Failure Mode Analysis for this project, reviewing the failure modes identified in that PFMA, and evaluating the assigned categorizations.
- C. Review the current STI document and include any recommendations for needed updates to that document as a part of the Part 12 Inspection Report, including providing recommended changes to the STI document in light of a new site-specific Seismic Hazard Review and Crest Deformation Study that has been completed outside of this specification and is not part of this scope.
- D. Conduct a Part 12 Dam Safety Inspection and Review of the following facilities: Mt. Tabor Reservoirs Nos. 1, 5 & 6, including dams, embankments, and all appurtenant piping, etc. excluding all generation, transformation and transmission equipment associated with the Mt. Tabor Hydroelectric Project. The inspection shall comply with the requirements expressed in the most current versions of Subpart D Part 12 Title 18 of the Code of Federal Regulations, and Chapter 14 of the FERC Engineering Guidelines for the Evaluation of Hydropower Projects.

- E. Prepare a Part 12 Dam Safety Report for submission to the FERC in accordance with the most current version of the regulations and guidelines and the Safety Inspection Outlined in Exhibit A. The report shall contain the results and conclusions generated in the tasks listed above and should be ready for submission to the FERC in final form by no later than October 27, 2009.
- F. The successful Proposer will need to have an individual member of their team that serves as the designated "Independent Consultant" for this project. That individual will be responsible for the project as a whole and will need to meet FERC's guidelines for required training and experience to serve in that role for this project. Prior to signing a contract with the successful Proposer, the City will need to request and then receive FERC's approval for the designated individual to serve as "Independent Consultant" for this project.

2. WORK PERFORMED BY THE CITY

The City has assigned a project manager to oversee the successful Proposer's work and provide support as needed. Specific duties the City will perform include:

- 1. Supplying access for the successful Proposer to the Mt. Tabor dams and reservoirs.
- 2. Supplying the successful Proposer with a copy of the FERC letter requiring the Inspection and a copy of the FERC letter approving the successful Proposer's Part 12D Consultant.
- 3. Upon request, the City will provide the successful Proposer with:
 - 1. Copy of construction specifications, plans, and photos for the Mt. Tabor Reservoirs and dams in both hard copy and electronic format.
 - 2. Copies of updated Supporting Technical Information Document and latest Surveillance Monitoring Plan and Surveillance Monitoring Reports.
 - 3. Copies of past stability analyses, site specific seismic evaluations, Potential Failure Mode Analysis, and other reports concerning the Mt. Tabor Reservoirs and dams to which the City has knowledge of and access to.
 - 4. Copies of drill logs from the installation of piezometers at the Mt. Tabor site, and surveillance records regarding water levels in the piezometers at that site including report-ready plots of the data from each of the piezometers from 2005 through June 2009.

3. DELIVERABLES AND SCHEDULE

Deliverables shall be considered those tangible resulting work products that are to be delivered to the City such as reports, draft documents, data, interim findings, drawings, schematics, training, meeting presentations, final drawings and reports. The successful Proposer is encouraged to provide any deliverables in accordance with the City's Sustainable Paper Use Policy. The policy can be viewed at:

<http://www.portlandonline.com/omf/index.cfm?c=37732> .

Title 18 Part 12, subpart D of the FERC's regulations and Chapter 14 of the FERC Engineering Guidelines for the Evaluation of Hydropower Projects, prescribe the scope of the inspections, evaluations to be performed, and the information that must be contained in the resulting report. An outline of the required Part 12D Safety Inspection Report dated July 1, 2005 is attached as Exhibit A to this Request For Proposals.

Deliverables and schedule for this project shall include:

- A. Draft FERC Part 12 Dam Safety Report and recommended STI updates. The successful Proposer shall provide 3 hard copies of each document to the Project Manager no later than October 15, 2009.

- B. Final FERC Part 12 Dam Safety Report. The successful Proposer shall provide 15 hard copies and 5 electronic PDF copies of final report on individual CDs to the Project Manager no later than October 27, 2009.

All deliverables and resulting work products from this contract will become the property of the City of Portland.

4. PLACE OF PERFORMANCE

Contract performance will take place primarily at the Proposer's facility. On occasion and as appropriate, work will be performed at City facilities, a third-party location or any combination thereof.

5. PERIOD OF PERFORMANCE

The City anticipates having the successful Proposer begin work immediately upon contract execution with submittal of final deliverables to the City occurring by June 30, 2011.

6. PUBLIC SAFETY

Public safety may require limiting access to public work sites, public facilities, and public offices, sometimes without advance notice. The Proposer shall anticipate delays in such places and include the cost of delay in the proposed cost. The successful Proposer's employees and agents shall carry sufficient identification to show by whom they are employed and display it upon request to security personnel. City project managers have discretion to require the successful Proposer's employees and agents to be escorted to and from any public office, facility or work site if national or local security appears to require it.

7. INSURANCE

The successful Proposer(s) shall agree to maintain continuous, uninterrupted coverage of all insurance as required by the City. There shall be no cancellation, material change, reduction of limits or intent not to renew the insurance coverage(s) without a 30-day written notice from the successful Proposer or its insurer(s) to the City.

Workers' Compensation Insurance in compliance with ORS 656.017, which requires subject employers to provide Oregon workers' compensation coverage for all their subject workers (firms with one or more employees, unless exempt under ORS 656.027).

General Liability Insurance with a combined single limit of not less than \$1,000,000 per occurrence for Bodily Injury and Property Damage. It shall include contractual liability coverage for the indemnity provided under this contract, and shall provide that the City of Portland, and its agents, officers, and employees are Additional Insureds but only with respect to the successful Proposer's services to be provided under this Contract.

Automobile Liability Insurance with a combined single limit of not less than \$1,000,000 per occurrence for Bodily Injury and Property Damage, including coverage for owned, hired, or non-owned vehicles, as applicable.

Professional Liability Insurance with a combined single limit of not less than \$1,000,000 per claim, incident, or occurrence. This is to cover damages caused by negligent acts, errors or omissions related to the professional services to be provided under this contract. If insurance coverage is provided on a "claims made" basis, the successful Proposer shall acquire a "tail" coverage or continue the same coverage for three years after completion of the contract, provided coverage is available and economically feasible. If such coverage is not available or economically feasible, contractor shall notify City immediately.

Certificates of Insurance: As evidence of the insurance coverages, the successful Proposer shall furnish acceptable insurance certificates to the City at the time signed contracts are returned to the City. The certificate will specify all of the parties who are Additional Insureds and will include the 30-day cancellation clause as identified above. Insuring companies or entities are subject to City acceptance. If requested, complete policy copies shall be provided to the City. The successful Proposer shall be financially responsible for all pertinent deductibles, self-insured retentions, and/or self-insurance.

SECTION C

1. INDEX

2. SAMPLE CONTRACT

3. PROJECT DATA

ATTACHMENTS

Exhibit A Part 12D Safety Inspection Report Outline

The Professional, Technical and Expert Services Contract is the City's standard contract and will be used as a result of this selection process. A sample contract can be viewed at: <http://www.portlandonline.com/shared/cfm/image.cfm?id=27067> .

Prior Part 12 inspection reports for Mt. Tabor Hydroelectric Project are available for viewing by Proposers at our City of Portland office by making an appointment with the Project Manager Chris Herzog, at 503-823-1388.

PART II

PROPOSAL PREPARATION AND SUBMITTAL

SECTION A

PRE-SUBMITTAL MEETING/CLARIFICATION

1. PRE-SUBMITTAL MEETING

There will be no pre-submittal meeting or site visit scheduled for this project.

2. RFP CLARIFICATION

Questions and requests for clarification regarding this Request for Proposal must be directed in writing, via email or fax, to the person listed below. **The deadline for submitting such questions/clarifications is May 28, 2009.** An addendum will be issued no later than 72 hours prior to the proposal due date to all recorded holders of the RFP if a substantive clarification is in order.

Chris Herzog
Portland Water Bureau
Hydropower Section
Room 530
1120 SW Fifth Avenue
Portland, OR 97204-1975
E-mail: Cherzog@water.ci.portland.or.us
Phone: (503) 823-1388
Fax: (503) 823-7533

SECTION B

PROPOSAL SUBMISSION

1. PROPOSALS DUE

Sealed proposals must be received no later than the date and time, and at the location, specified on the cover of this solicitation. The outside of the envelope shall plainly identify the subject of the proposal, the RFP number and the name and address of the Proposer. It is the Proposer's responsibility to ensure that proposals are received prior to the specified closing date and time, and at the location specified. Proposals received after the specified closing date and/or time shall not be considered and will be returned to the Proposer unopened. The City shall not be responsible for the proper identification and handling of any proposals submitted to an incorrect location.

2. PROPOSAL

Proposals must be clear, succinct and not exceed 15 pages. Section dividers, resumes, title page, and table of contents do not count in the overall page count of the proposal. Proposers who submit more than the pages indicated may not have the additional pages of the proposal read or considered.

For purposes of review and in the interest of the City's Sustainable Paper Use Policy and sustainable business practices in general, the City encourages the use of submittal materials (i.e. paper, dividers, binders, brochures, etc.) that contain post-consumer recycled content and are readily recyclable. The City discourages the use of materials that cannot be readily recycled such as PVC (vinyl) binders, spiral bindings, and plastic or glossy covers or dividers. Alternative bindings such as reusable/recyclable binding posts, reusable binder clips or binder rings, and recyclable cardboard/paperboard binders are examples of preferable submittal materials. Proposers are encouraged to print/copy on both sides of a single sheet of paper wherever applicable; if sheets are printed on both sides, it is considered to be two pages. Color is acceptable, but content should not be lost by black-and-white printing or copying.

All submittals will be evaluated on the completeness and quality of the content. Only those Proposers providing complete information as required will be considered for evaluation. The ability to follow these instructions demonstrates attention to detail.

3. ORGANIZATION OF

Proposers must provide all information as requested in this Request for Proposal (RFP).

PROPOSAL

Responses must follow the format outlined in this RFP. Additional materials in other formats, or pages beyond the stated page limit(s) may not be considered. The City may reject as non-responsive at its sole discretion any proposal or any part thereof, which is incomplete, inadequate in its response, or departs in any substantive way from the required format. Proposal responses shall be organized in the following manner:

1. Cover Letter
2. Project Team
3. Proposer's Capabilities
4. Project Approach and Understanding
5. Diversity in Employment and Contracting Requirements
6. Proposed Cost
7. Supporting Information

SECTION C

EVALUATION CRITERIA

1. COVER LETTER

By submitting a response, the Proposer is accepting the General Instructions and Conditions of this Request for Proposal and the Standard Contract Provisions of the Professional, Technical and Expert Services contract.

The Cover Letter must include the following:

- RFP number and project title
- name(s) of the person(s) authorized to represent the Proposer in any negotiations
- name(s) of the person(s) authorized to sign any contract that may result
- contact person's name, mailing or street addresses, phone and fax numbers and email addresses

A legal representative of the Proposer, authorized to bind the Proposer in contractual matters must sign the Cover Letter.

BUSINESS COMPLIANCE

The Proposer must be in compliance with the laws regarding conducting business in the City of Portland before an award may be made. The Proposer shall be responsible for the following:

Certification as an EEO Affirmative Action Employer

All Proposers must be certified as Equal Employment Opportunity Employers as prescribed by Chapter 3.100 of the Code of the City of Portland. Failure to receive EEO certification prior to the date and time of bid opening may result in delaying the award of the contract. Details of certification requirements are available from the Bureau of Purchases, 1120 SW Fifth Avenue, Room 750, Portland, Oregon 97204, (503) 823-6855, website: <http://www.portlandonline.com/omf/purchasing>

Non-Discrimination in Employee Benefits (Equal Benefits)

Proposers are encouraged to submit the Equal Benefits Compliance Worksheet/Declaration Form with their response. If not submitted, you will be contacted and required to provide this form prior to contract award; otherwise your proposal may be rejected. If your company does not comply with Equal Benefits and does not intend to do so, you must still submit the Form. The Equal Benefits Compliance Worksheet/Declaration Form can be obtained from the following web site: <http://www.portlandonline.com/omf/purchasing>

Fill out the form properly. You may call the Bureau of Purchases at 503-823-6855 to ensure you correctly complete the form. You may also call the contact listed on the front page of this solicitation document for assistance.

There are five options on the Worksheet/Declaration Form to pick among. They range from full compliance (Options A, B, C), to one that requires advance authorization by the City (Option D – Delayed Compliance), to Non Compliance. Select the option that is true of your company's standing at the time you submit your proposal. You cannot change your answer after you submit the Worksheet/Declaration Form.

Option D is only used if you have an official waiver from the City. Waivers are only issued by the Bureau of Purchases.

The Form provides the City your declared Equal Benefit status. However, the City issues the final determination of your Equal Benefit status for purposes of contract award.

If information on your form is conflicting or not clearly supported by the documentation that the City receives, the City may seek clarification to ensure we properly classify your compliance.

Business License

All Proposers must be in compliance with the City of Portland Business License requirements as prescribed by Chapter 7.02 of the Code of the City of Portland. Details of compliance requirements are available from the Revenue Bureau License and Tax Division, 111 SW Columbia Street, Suite 600, Portland, Oregon 97201, (503) 823-5157, website: <http://www.portlandonline.com/omf/index.cfm?c=29320>

If your firm currently has a business license and is EEO certified, include in the Cover Letter your firm's City of Portland Business License number as well as the Equal Employment Opportunity (EEO) expiration date.

2. PROJECT TEAM

The Proposer should address the qualifications and experience of the team of people that will be assigned to this Project for performing the work identified in this RFP. Please describe your project team's experience and qualifications and how well it relates to all phases of the project proposal. Please include:

- A. Names of key members who will be performing the work on this project, and:
 - their responsibilities on this project
 - experience on similar or related projects
 - unique qualifications
 - percentage of their time that will be devoted to the project
- B. Key Personnel

Provide key personnel's resumes that demonstrate that the individual(s) meets the qualification and experience requirements for performing the work outlined in this RFP

The Proposer will need to indicate which individual member of their team that they are proposing to serve as the designated "Independent Consultant" for this project. That individual will be responsible for the project as a whole and will need to meet FERC's guidelines for required training and experience to serve in that role for this project. Prior to signing a contract with the successful Proposer, the City will need to request and then receive FERC's approval for the designated individual to serve as "Independent Consultant" for this project.

Proposer must describe in the proposal the plan for obtaining maximum utilization of certified M/W/ESB firms on work completed if awarded a contract.

3. PROPOSER'S

This relates to the Proposer's capabilities and resources in relation to this project. Please describe your firm's capabilities and resources including the following:

CAPABILITIES

- Describe similar projects performed within the last 5 years, which best characterize firm's capabilities, work quality and cost control.
- Describe similar projects with other government agencies.
- Describe firm's resources available to perform the work for the duration of the project and other on-going projects.

4. PROJECT APPROACH AND UNDERSTANDING

The Proposer's understanding and approach to the project is an important aspect of the RFP process. The Proposer should provide clear and concise understanding of the project by describing and clarifying any major issues based upon project information provided in this RFP, including attachment materials identified in Part I, Section C. For each phase of work, the project approach should:

- Describe the proposed work tasks and activities, the methodology that will be used to accomplish them, and identify the team members who will work on each task.
- Describe the proposed work products that will result from each task or activity.
- Identify points of input and review with City staff.
- Identify the time frame estimated to complete each task.

5. DIVERSITY IN EMPLOYMENT AND CONTRACTING REQUIREMENTS

The City is committed to increasing contracting opportunities for State of Oregon certified minority, women and emerging small business (M/W/ESB) enterprises. The City values, supports and nurtures diversity, and encourages any firm contracting with the City to do the same, maximizing M/W/ESB business participation with regard to all City contracts. As such, the City has established an overall 20% utilization goal in awarding PTE contracts to State of Oregon certified emerging small business (ESB) enterprises and has assigned at least 15% of the total points available on this solicitation to determine the award of this contract. No goal is set for the use of minority (MBE) and women business (WBE) enterprises, but the City is committed to ensuring that such firms receive opportunities and equal consideration to be awarded City PTE contracts.

All Proposers shall address the following in their proposals:

- a. Indicate if your firm is currently certified in the State of Oregon as an MBE, WBE and/or ESB, or if your firm has applied for certification with the State of Oregon's Office of Minority, Women and Emerging Small Business (OMWESB).
- b. Identify your current diversity of workforce and describe your firm's commitments to providing equal employment opportunities. Include in your response:
 - Number of total employees and description of type of work performed.
 - Number of minorities and women within your current workforce, broken out by ethnicity and positions held.
 - Any underutilization of minorities or women within your workforce and your firm's efforts to remedy such underutilization.
 - Any plans to provide innovative mentoring, technical training or professional development opportunities to minorities and women in your workforce in relation to this project, or plans to employ minorities and women to work on this project.
 - Description of the process your firm uses to recruit minorities and women.
- c. Have you subcontracted or partnered with State of Oregon certified M/W/ESB firms on any project within the last 12 months? If so, please describe the history of the firm's subcontracting and partnering with certified M/W/ESB firms. Include in your response:
 - List of State of Oregon certified M/W/ESB firms with which your firm has had a contractual relationship during the last 12 months.
 - Any innovative or successful measures that your firm has undertaken to work with M/W/ESB firms on previous projects.
 - Any mentoring, technical or other business development services your firm has provided to previous or current M/W/ESB subconsultants or partners, or will provide in relation to this project.

- d. Are you subcontracting any element of your proposal? Describe your firm's plan for obtaining maximum utilization of certified M/W/ESB firms on this project. Include in your response:
- Subcontracting opportunities your firm has identified in the scope of this project.
 - Efforts made relating to outreach and recruitment of certified M/W/ESB firms. Did your firm advertise contracting opportunities in the *Daily Journal of Commerce*, *Skanner*, *Oregonian*, *Observer*, *El Hispanic News*, *Asian Reporter*, and/or other trade publications? Did your firm conduct any outreach meetings? Did your firm use the State's OMWESB certification list, or other source, as a basis for direct outreach? What were the actual results of any of the above efforts?
 - Any proposals received from certified M/W/ESB firms. If any such proposals were rejected, provide reasons for rejection.
 - Other efforts your firm used or proposes to use in relation to this project.
- e. If your firm will be utilizing certified M/W/ESB firms on this project, please list those firms and detail their role within your proposal.

The City expects thoughtful consideration of all of the above Diversity in Employment and Contracting criteria in the preparation of proposals, and will enforce all diversity in workforce and M/W/ESB commitments submitted by the successful Proposer.

6. PROPOSED COST

The proposal shall include the Proposer's true estimated cost or fixed-price estimate for the proposed project approach irrespective of the City's anticipated cost. Additionally, this cost shall include the hourly rates of each person associated with the project as well as the estimated number of hours each staff member will be expected to work on each task.

7. SUPPORTING INFORMATION

Supporting material must include a minimum of 3 references, and may include other information pertinent to the project or work to be performed. References must include the contact person's name, agency, address, phone number, their role in the project (e.g., project manager, etc.), name of the project and when the work was done.

PART III

SECTION A

PROPOSAL EVALUATION

PROPOSAL REVIEW AND SELECTION

1. EVALUATION CRITERIA SCORING

Each proposal shall be evaluated on the following evaluation criteria, weighting and maximum points, as follows:

Criteria		Maximum Score
a.	Cover Letter	0
b.	Project Team	25
c.	Proposer's Capabilities	20
d.	Project Approach and Understanding	20
e.	Diversity in Employment and Contracting	15
f.	Proposed Cost	15
g.	Supporting Information	5
Total Points Available		100

2. PROPOSAL REVIEW

An evaluation review committee will be appointed to evaluate the proposals received. For the purpose of scoring proposals each of the committee members will evaluate each proposal in accordance with the criteria and point factors listed above. The evaluation committee may seek outside expertise, including but not limited to input from technical advisors, to assist in evaluating proposals.

The successful Proposer shall be selected by the following process:

- a. An evaluation committee will be appointed to evaluate submitted written proposals.
- b. The committee will score the written proposals based on the information submitted according to the evaluation criteria and point factors.
- c. The committee will require a minimum of **10** working days to evaluate and score the written proposals.
- d. A short list of Proposers, based on the highest scores, may be selected for oral interviews if deemed necessary. The City reserves the right to increase or decrease the number of Proposers on the short list depending on the scoring and whether the Proposers have a reasonable chance of being awarded a contract.
- e. If oral interviews are determined to be necessary, the scores from the written proposals will be considered preliminary. Final scores, based on the same evaluation criteria, will be determined following the interviews.

All communications shall be through the contact(s) referenced in Part II, Section A.2 of the RFP. At the City's sole discretion, communications with members of the evaluation committee, other City staff or elected City officials for the purpose of unfairly influencing the outcome of this RFP may be cause for the Proposer's proposal to be rejected and disqualified from further consideration.

For contracts over \$100,000, the evaluation committee's recommendation for contract award will be submitted to the Portland City Council for approval. The City has the right to reject any or all proposals for good cause, in the public interest.

NOTE: In the City's discretion, litigation between the City and a Proposer shall be cause for proposal rejection, regardless of when that litigation comes to the City's attention and regardless how the Proposer's proposal may have been scored. Proposals may also be rejected if they use subcontractors or subconsultants who are involved in litigation with the City. Proposers concerned about possible rejection on this basis should contact the City before submission of a proposal for a preliminary determination of whether its proposal will be rejected.

3. CLARIFYING PROPOSAL DURING EVALUATION

During the evaluation process, the City has the right to require any clarification or change its needs in order to understand the Proposer's view and approach to the project and scope of the work.

SECTION B

CONTRACT AWARD

1. CONSULTANT SELECTION

The City will negotiate and, if successful, award a contract to the highest scoring Proposer. Should the City not reach a favorable agreement with the highest scoring Proposer, at the City's sole discretion, the City shall terminate negotiations and commence negotiations with the second highest scoring Proposer and so on until a favorable agreement is reached. A consultant selection process will be carried out under Portland City Code Chapter 5.68.

2. CONTRACT DEVELOPMENT

The proposal and all responses provided by the successful Proposer may become a part of the final contract. The form of contract shall be the City's Contract for PTE Services.

3. AWARD REVIEW AND PROTESTS

REVIEW:

Following the Notice of Intent to Award, the public may view proposal documents. However, any proprietary information so designated by the Proposer as a trade secret and meeting the requirements of ORS 192.501(2) will not be disclosed unless the Multnomah County District Attorney determines that disclosure is required. At this time, Proposers not awarded the contract may seek additional clarification or debriefing, request time to review the selection procedures or discuss the scoring methods utilized by the evaluation committee.

PROTESTS OF CONTRACT AWARDS:

Protests may be submitted to the Purchasing Agent only for contracts in excess of the formal limit established by the City Auditor (reference <http://www.portlandonline.com/omf/index.cfm?a=74585&c=27353>), and only from those Proposers who would receive the contract if their protest were successful.

Protests must be received by the Purchasing Agent within seven (7) calendar days UNLESS OTHERWISE NOTED following the date of the City's Notice of Intent to Award was issued. The protest must specifically state the reason for the protest and show how its proposal or the winning proposal was mis-scored or show how the selection process deviated from that described in the solicitation document. The contract award process will be put on hold until the protest has been resolved.

Timely protests must include all legal and factual information regarding the protest, and a statement of the form of relief requested. Protests received later than specified or from other than the Proposer who would receive the contract if the protest was successful will not be considered. The exercise of judgment used by the evaluators in scoring the written proposals and interviews, including the use of outside expertise, is not grounds for appeal.

The Purchasing Agent may waive any procedural irregularities that had no material affect on the selection of the proposed contractor, invalidate the proposed award, amend the award decision, request the evaluation committee re-evaluate any proposal or require the bureau to cancel the solicitation and begin again to solicit new proposals. In the event the matter is returned to the evaluation committee, the Purchasing Agent shall issue a notice canceling the Notice of Intent to Award.

Decisions of the Purchasing Agent are final and conclude the administrative appeals process.

Appendix H

Part 12D Safety Inspection Report Outline

Table of Contents

The Table of Contents must show the initial page numbers for each section. If any subsection is not applicable, include the subsection with a statement of “Not Applicable” and an explanation of the reason(s) why.

For licensed projects that include multiple independent dam and powerhouse developments, separate Part 12D reports should be published for each development.

- 1. Findings and Recommendations**
- 2. Project Description**
- 3. Discussion of Potential Failure Mode Analysis Report**
- 4. Surveillance and Monitoring with Respect to Potential Failure Modes**
- 5. Field Inspection**
- 6. Operation and Maintenance Programs Relative to Potential Failure Modes**
- 7. Assessment of Supporting Technical Information Document**

List of Tables (with location)

List of Figures (with location)

List of References

Appendices for Part 12D Inspection Report

A. FERC Letter Requiring Part 12D Inspection

B. FERC Letter Approving Part 12D Consultant - Include date of current report outline provided by FERC. Use report outline provided with FERC letter, not latest revision.

C. Project Figures

Only provide general overview drawings necessary to understand the project and items discussed in the report. If figures are placed in Section 2, provide a statement that figures may be found in Section 2. Optionally, if the STI is bound with the Part 12D report provide a statement that figures may be found in the STI document; duplicate drawings from the STI do not need to be included in the Part 12D report proper.

Detailed drawings should be included in the Supporting Technical Information document.

Chapter 14

Monitoring the Performance of Dams

D. Instrumentation Monitoring Data Plots

List each figure and drawing included in the report. Optionally, instrumentation plots may be placed in Section 4 of the report and a statement included in Appendix D that the plots may be found in Section 4.

E. Inspection Photographs

Optionally, some or all of the photographs may be included in the appropriate sections of the report. If photographs are included within the report, provide a list of the photographs and the corresponding page number in Appendix E.

F. Inspection Checklists and/or Field Notes (Optional)

G. Operation and Maintenance Documentation (If required)

Chapter 14

Monitoring the Performance of Dams

1.0 Findings and Recommendations

This Section includes a summary of the Part 12D Independent Consultant's findings and assessments and the Part 12D Independent Consultant's conclusions and recommendations.

1.1 Findings

- 1.1.1 Summary assessment of the PFMA report
- 1.1.2 Summary assessment of the Surveillance and Monitoring Plan
- 1.1.3 Summary of Field Inspection Findings
- 1.1.4 Summary of O&M status
- 1.1.5 Summary Assessment of "Supporting Technical Information" document

Note: Specifically identify any new calculations prepared subsequent to the previous Part 12D Report.

1.2 Conclusions

The conclusions of the Independent Consultant regarding the condition and suitability for continued safe and reliable operation of the project and specific conclusions regarding the information in each Section of this Part 12D report.

- 1.2.1 Conclusions regarding the suitability of the Project for continued safe and reliable operation.
- 1.2.2 Conclusions regarding the Project Description
- 1.2.3 Conclusions regarding the Potential Failure Modes Analysis Report
- 1.2.4 Conclusions regarding the Surveillance and Monitoring Plan
- 1.2.5 Conclusions regarding the Field Inspection
- 1.2.6 Conclusions regarding the Operations and Maintenance Programs
- 1.2.7 Conclusions regarding the Supporting Technical Information

1.3 Recommendations

The recommendations of the Independent Consultant to improve or maintain the condition and suitability for continued safe and reliable operation of the project and specific recommendations regarding the information in each Section of this Part 12D report.

- 1.3.1 Recommendations regarding the suitability of the Project for continued safe and reliable operation.
- 1.3.2 Recommendations regarding the Project Description
- 1.3.3 Recommendations regarding the Potential Failure Modes Analysis Report
- 1.3.4 Recommendations regarding the Surveillance and Monitoring Plan
- 1.3.5 Recommendations regarding the Field Inspection

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Monitoring the Performance of Dams

1.3.6 Recommendations regarding the Operations and Maintenance Programs

1.3.7 Recommendations regarding the Supporting

1.4 Certification

Note: By signing this document, the Part 12D Independent Consultant is stating that the entire report has been developed by and under the direction of the undersigned. The Part 12D Independent Consultant shall make a clear statement that he/she generally concurs with the assumptions, methods of analyses, and results of all studies documented in the report.

The Part 12D Independent Consultant is thus taking responsibility for the Part 12D report contents as a Professional Engineer.

1.4.1 List of all field inspection participants

1.4.2 Reference to FERC Order 122 dated March 1, 1981 and paragraph 12.37 (c) (7).

1.4.3 Signature(s) of Part 12D Independent Consultant(s) and PE Stamp

See Appendix A: **FERC Letter Requiring Part 12D Inspection**

See Appendix B: **FERC Letter Approving Part 12D Consultant** - (Include date of current report outline provided by FERC)

2.0 Project Description

2.1 Brief Project Description

For each major element and ancillary structure, provide a brief description of the type of structure, general dimensions, etc. The detailed project description will be in the "Supporting Technical Information" document.

For multi-project or development licenses, include a brief outline of how this site fits with the other projects.

Include a short paragraph with very brief project history. When constructed, when modified, any incidents.

2.2 Hazard Potential Classification.

Based on views from the dam, other project works inspected and discussion with the licensee, document any changes in upstream or downstream conditions that might affect the Hazard Potential Classification. Review with the licensee the methods and assumptions used to develop the IDF. If the IDF is less than the PMF, the IC should confirm that the IDF is still valid based on an assessment of the downstream conditions as noted above.

2.3 Summary of Standard Operating Procedures

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Monitoring the Performance of Dams

- 2.3.1 Purpose of Project (Run of river, storage, flow augmentation, flood surcharge storage, control reserve, pumped storage, etc.)
- 2.3.2 Reservoir rule curves by season (include seasonal reservoir level operating levels and restrictions of reservoir level due to safety concerns, if any)
- 2.3.4 Standard gate operation procedures (lead and following gates, emergency power systems, etc.)

2.4 Modifications Conducted for Project Safety

Document any modifications to project works since the last Part 12D inspection that have been done to improve project safety. (i.e.: spillway gates reinforced, seepage drain, berm added, crest raised, post-tensioned anchors installed, foundation drains or relief wells cleaned, etc.). In the next Part 12D Safety Inspection Report, these items will become part of Section 2.1. This information should be fully described in the updated “Supporting Technical Information” document submitted with the Part 12D report.

Do not include routine maintenance such as unit overhaul, gate painting, etc. Note, that generators, transformers, and transmission facilities are excluded from the Part 12D program under 18CFR subsection 12.35.

2.5 Flood History

- 2.5.1 Flood of Record, PMF, IDF
- 2.5.2 Zero freeboard spillway capacity
- 2.5.3 Peak spillway discharge during last five year period
- 2.5.4 Peak reservoir elevation during last five year period

See Appendix C: **Project Figures** (Note: If the STI is bound with this report, do not duplicate figures)

3.0 Discussion of Potential Failure Mode Analysis Report

Do not include security issues in the Part 12D report. For licensed projects that include multiple independent dam and powerhouse developments, separate PFMA studies and reports should be made for each development.

3.1 General

Identify the Core Team members, and their affiliations, who developed the comprehensive Potential Failure Modes Analysis (PFMA) or its update. Note that the process was in accordance with FERC “Engineering Guideline for the Evaluation of Hydropower Projects,” Chapter 14.

3.2 Assessment of Potential Failure Mode Analysis Report

Assess the viable potential failure modes identified in the PFMA report. These would generally be Category 1 through Category 3 PFMs. Provide an assessment of the

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Monitoring the Performance of Dams

reasonableness and completeness of the failure mode scenario and whether the PFMs identified have a real possibility of occurrence. Potential Failure modes should be listed in order of importance. Each PFM assessment should include:

- A description that includes the sequence of conditions and events that would lead to the potential failure mode;
- An assessment of the risk reduction opportunities for each PFM; and
- An assessment of the Surveillance and Monitoring Plan for each PFM.

For example, the report would be formatted as follows.

3.2.1 PFM 1. (i.e. Internal erosion, piping)

3.2.1.1 Description of PFM (may be taken from PFMA report)

3.2.1.2 Assessment of Risk Reduction Opportunities

3.2.1.3 Assessment of Surveillance and Monitoring Plan

3.2.2 PFM 2. (i.e. Seismic induced deformation)

3.2.2.1 Description of PFM (may be taken from PFMA report)

3.2.2.2 Assessment of Risk Reduction Opportunities

3.2.2.3 Assessment of Surveillance and Monitoring Plan

Etc.

- 3.3 Are there new potential failure modes that have been identified and addressed in this report or that should be assessed? If so, include the appropriate Description of the PFM, Assessment of mitigation actions and Assessment of the SMP as discussed above.

See “Supporting Technical Information” document: **Potential Failure Mode Analysis Study Report** (Update as appropriate)

4.0 Surveillance and Monitoring with Respect to Potential Failure Modes

Note: Review and assessment of Surveillance and Monitoring Plans must always be done from the point of view of potential failure modes. Although the primary assessment is with respect to the potential failure modes identified in the PFMA study, the Independent Consultant must determine if there are potential failure modes not previously addressed or not adequately considered.

For the purposes of this section, a Threshold Level is the value used in the analysis or design, or is established from the historic record. An Action Level is the instrument reading that triggers increased surveillance or an emergency action.

4.1 Operator’s Surveillance Program

Daily/weekly operator’s inspections and reports.

- 4.2 Active Instrumentation: Include a schematic figure showing location of instrumentation (not detailed or cross section).

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Monitoring the Performance of Dams

This will vary by project. Discuss only the instruments actually at the project. Is instrumentation in accordance with Chapter IX of the FERC “Engineering Guideline for the Evaluation of Hydropower Projects”? Is the instrumentation functioning properly? Etc.

- Piezometers
- Weirs
- Settlement/alignment monuments
- Crack gages
- Upstream river and/or rain gage stations
- Headwater/tailwater (alarm systems)
- etc.

4.3 Threshold and Action levels

For each instrument, or group of instruments as appropriate, provide a table of Threshold and Action levels as defined above.

4.4 Reading procedures/frequency

For each instrument, or group of instruments as appropriate, discuss:

- Data acquisition procedures (manual/automated)
- Data evaluation procedures (process; is data evaluated in a timely manner by a qualified engineer; are readings compared to Threshold and Action levels defined for each instrument)
- Spurious readings (are spurious readings confirmed or explanations provided)

4.5 Assessment of Instrumentation Data and Surveillance and Monitoring Plans Relative to Potential Failure Modes

Include newly identified potential failure modes.

5.0 Field Inspection

5.1 Field Inspection Observations

For each element of the project (i.e.: spillway, earthfill embankment, gravity section, intake, powerhouse, conveyance system, etc.), observe and report visual observations of the following issues as appropriate. Include photographs to document significant project features and observations. If an inspection checklist is used, include a copy of the checklist Appendix F. A site specific inspection checklist should be formatted to include specific visual surveillance items identified in the PFMA.

The intent of this section is to highlight changed conditions for the report reviewer, not to document unimportant or minor details.

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Monitoring the Performance of Dams

The report should be in text format by structure or element addressed individually. For each structure or element of the project, the Part 12D Independent Consultant should consider the following items as appropriate:

- Settlement
- Movement – including abutments (cracks or other signs of distress or change)
- Erosion
- Seepage/Leakage
- Cracking
- Deterioration
- Spillway gate Operation/Standby Power (At a minimum, the Part 12D Independent Consultant needs to review the licensee's annual certificates of spillway gate operation and interview project operating staff to assure that emergency backup systems work and that operating personnel know how to use them. At least one spillway gate should be operated at least one foot during the Part 12D inspection using the standby generator.)
- Outlet/Sluice Gate Operation
- Water conveyance systems (canals / flumes / penstocks / tunnels / surge chambers, emergency bypass or closure systems, etc.)
- Foundation Drain/Relief Well Operation
- Evidence of high artesian or uplift pressures (structures / foundations / abutments)
- Observations of sediment transport (piping evidence)
- Observations of seeps, wet areas, springs, green grass
- Other Pertinent Observations

5.2 Status of Response(s) to Recommendation(s) in Last Part 12D Report.

5.3 Field Observations with Respect to Potential Failure Modes

Document field observations pertinent to each potential failure mode noted in Section 3

5.4 Adequacy/Operation of Public Alert Systems

Note: Are upstream spillway warning buoys, and downstream sirens and lights operable?

See Appendix E: **Inspection Photographs** (Optionally, some or all of the photographs may be included in the appropriate sections of the report. If photographs are included within the report, provide in Appendix E a list of the photographs and the corresponding page number)

See Appendix F: **Inspection Check List** (optional)

Chapter 14**Monitoring the Performance of Dams****6.0 Operation and Maintenance Programs Relative to Potential Failure Modes**

Do not include security issues in the Part 12D inspection report. If observations of significant O&M issues are made, include in report for possible new potential failure mode analysis.

6.1 Summary of PFMA identified O&M issues (from PFMA report)**6.2 Operation and Maintenance Procedures****6.2.1 Communication/Response**

Address adequacy and reliability of remote monitoring, communication and control systems (Operations / Instrumentation / Telemetry – Do the systems provide adequate reliability and redundancy? Can a specific spillway gate, valve or other project component be operated remotely on demand?)

6.2.2 Electrical/Mechanical Systems

- Spillway Gate Motors (line/line voltage, amperage draw, motor name plate rating information)
- Standby and Redundant Power Sources
- Manual/Remote/Automatic Operation of Gates and Valves
- Gate Operation Sequence
- Icing protection (heaters/bubblers/reservoir level restriction)

6.2.3 Human Factors

- Adequate Staff for Emergency Response (Multiple Sites)
- Reliable Access Routes (winter/storm conditions)
- Training
- Electricians/Mechanics/Laborers
- Adequate Time to Respond
- Call Out Systems (time for crew to reach site after call out)

6.3 Assessment of O&M Procedures Relative to Potential Failure Modes

See Appendix G: **Operation and Maintenance Documentation**

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Monitoring the Performance of Dams

7.0 Assessment of Supporting Technical Information Document

The purpose of this section is for the Part 12D Independent Consultant to assess the contents of the “Supporting Technical Information” document compiled by the licensee. The STI document should include information needed to understand and confirm the underlying assumptions and the conclusions of the analyses of record supporting the assessment of the safety of the Project.

In each section, where appropriate, the Independent Consultant shall make a clear statement that they have reviewed the pertinent analyses and evaluations along with the underlying assumptions and that they have concluded that the assumptions and methods of analysis or evaluation were appropriate for the structure, were applied correctly and are appropriate given current guidelines and the state of dam safety practice.

- 7.1 Potential Failure Mode Analysis Study Report (Include a statement referring to Section 3 for a discussion of the Potential Failure Mode Analysis)
- 7.2 Description of Project
- 7.3 Construction History
- 7.4 Standard Operating Procedures
- 7.5 Geology and Seismicity
- 7.6 Hydrology and Hydraulics
- 7.7 Surveillance and Monitoring Program
- 7.8 Stability and Stress Analyses of Project Structures
- 7.9 Spillway Gates
- 7.10 Pertinent Correspondence Related to Safety of Project Works
- 7.11 Status of Studies in Process and Outstanding Issues
- 7.12 References
- 7.13 Conclusions

Chapter 14**Monitoring the Performance of Dams****APPENDICES****List of Tables** (with location)**List of Figures** (with location)**List of References****A. FERC Letter Requiring Part 12D Inspection**

Note: May include specific FERC concerns to be addressed by Part 12D Independent Consultant.

B. FERC Letter Approving Consultant

Note: Include date of report outline provided by FERC.

C. Project Figures

This Appendix should include the following figures as appropriate. All Figures should be consecutively numbered. Figures should be general without excessive detail so as to be clearly legible. Figures should include documentation of significant changes since last Part 12D report. If STI document to be directly bound in this report, do not duplicate the figures. FERC Exhibit and relicensing drawings can be used.

- Location map with project facilities located including conveyance systems and access routes from main roads and nearest town
- Plans of project facilities
- Typical sections and profiles of key project features (dams, spillways, powerhouses, intakes, emergency/fuse plug spillways, chute profiles, etc.)
- Profiles and typical sections of water conveyance systems (canals, tunnels, penstocks, flumes, surge chambers, etc)
- Satellite or aerial photo of project and downstream area
- Spillway and tailwater rating curves

D. Instrumentation Monitoring Data Plots

Note: Plans and cross-sections with locations of each instrument, including design phreatic surface or uplift pressure profile, and tabulated data for each instrument are included in the "Supporting Technical Information" document only. See Chapter IX, Instrumentation and Monitoring, of the FERC Engineering Guidelines for the Evaluation of Hydropower Projects for additional information. Only time versus reading graphs are included here as NEW information. Tables of data should be provided on a CD bound into the Part 12D report

If data plots are included in Section 4 of the Part 12D report, a statement should be provided here directing the reader to Section 4 for the information.

- Time versus Reading data plots

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- Plot all data to date, not just last five years (alternative is to plot last 15 years and note historic range for each unit)
- Do not put too many instruments on one plot
- Try to put all instruments from one section or profile on the same plot
- Mark tip elevation, unscreened length, ground elevation and top of piezometer elevation for each piezometer on the data plot. This information can be provided in a Table to enhance legibility of the graph.
- Use symbols and/or different line types for each unit, not just colors (colors do not reproduce in black and white and some people are color blind - Note that yellow and blue do not reproduce on Xerox machines)
- Include headwater and tailwater levels on each plot
- Force all time scales to show full year cycles from January through December
- For multiple plots for the same project, force vertical and horizontal scales on all plots of the same type to have the same scale or total range so plots can be directly overlaid
- Mark threshold values
- Show monthly precipitation on one sheet
- Mark action levels requiring emergency response

E. Inspection Photographs**F. Inspection Checklist (optional)****G. Operation and Maintenance Documentation (if required)**

Appendix I

Guidelines for Supporting Technical Information

The “Supporting Technical Information” document must include a revision sheet and contain the following sections:

Section	Title
	Table of Contents
1.	Potential Failure Mode Analysis Study Report
2.	Description of Project Structures
3.	Construction History
4.	Standard Operation Procedures
5.	Geology and Seismicity
6.	Hydrology / Hydraulics
7.	Surveillance and Monitoring Plan
8.	Stability / Stress Analysis of Project Structures
9.	Spillway Gates
10.	Pertinent Correspondence Related to Safety of Project Works
11.	References

The information to be included in each section is described below. If an item is not pertinent to the Project, include the item in the report and state that the item is Not Applicable (i.e. Section 9 “Spillway Gates” if the dam has an uncontrolled spillway).

Chapter 14**Monitoring the Performance of Dams****SUPPORTING TECHNICAL INFORMATION****Revision Log
Table of Contents****1.0 Potential Failure Mode Analysis Study Report**

Include a complete copy of the latest “Potential Failure Modes Analysis Report” with all attachments. All updates shall be included in this Section of the STI.

2.0 Description of Project Works and Project Drawings

This is a detailed description of the project and project works that is part of the Part 12D Independent Consultant review. In general, this information will come directly from existing sources such as prior Part 12D Inspection Reports, licensing or relicensing documents or company brochures. The detailed descriptions would include the following elements as appropriate:

- General project description including project name and owner
- Project location including nearest town(s), river system, etc.
- Purpose of Project
- Main dam and any auxiliary dams
- Spillway(s) including stilling basins
- Non-overflow water retaining structures such as powerhouses
- Intakes
- Conveyance systems (penstocks, tunnels, surge chambers, flumes, canals, inverted siphons, including control, regulating, and pressure relief devices, etc.)
- Powerhouse(s)
- Low level outlets including minimum flow devices

The following drawings shall be included

- USGS Quad map or other location map with project facilities located including conveyance system alignment
- Plan of licensed project facilities and project boundaries
- Typical sections and profiles of key project works (dams, spillways, powerhouses, intakes, canals, tunnels, penstocks, flumes, surge chambers, inverted siphons, etc.)
- Satellite or aerial photo of project and downstream area if available

Chapter 14**Monitoring the Performance of Dams****3.0 Construction History**

In general, this information will be copied directly from existing sources such as prior Part 12D reports, construction reports or company brochures. Include a summary of the project construction history based on the following sources of information:

- Design reports and pertinent memoranda from licensing and permitting documents
- Laboratory investigations and construction testing reports
- Field and lab geotechnical investigations
- Construction reports and photographs
- Specification documents
- Reports of major modifications conducted for dam safety since last Part 12D inspection
- Construction chronology that includes all a summary of original construction and all significant work completed related to project safety. Do not include routine maintenance items such as gate painting, unit overhauls, etc.

4.0 Standard Operation Procedures

Include summaries of the standard operating procedures for the project. This section should include: seasonal minimum flow requirements, lead and follow gate sequence, reservoir level restrictions by season, etc.

4.1 Dam Operations

- Schedule of Inspections (include routine operations by operating staff, inspections by engineering staff, and special inspections as appropriate)
- Inspection checklist(s)
- Procedures for assuring satisfactory operating condition of critical systems including; SCADA systems, spillway gate operators, spillway gates, and low level outlet works

4.2 Reservoir Operations**4.2.1 Normal Operations**

- Typical filling schedule
- Inflow forecasting procedure
- Ramping rate requirements (reservoir and releases)
- Downstream minimum flow requirement schedule

4.2.2 Flood Operations

- Criteria for starting gate operations
- Method of gate operation (local or remote)
- Gate operating sequence (both spillway and low level outlets as applicable). Are gates operated such that all gates are opened a similar amount? Are some gates opened fully before others are operated? etc.

Chapter 14**Monitoring the Performance of Dams****5.0 Geology and Seismicity**

In general, this section should be copied from existing reports and company brochures. Include summaries of applicable information in the following sections:

5.1 Geology**5.1.1 Regional geology**

5.1.2 Site geology and local foundation conditions including geologic maps, cross-sections and profiles under the dam(s) and pertinent project works.

5.1.3 Potential landslides, loose rock formations or adverse bedding orientations that could affect project works

5.1.4 Potential sinkhole, karst, solutioning, basalt flow issues, etc. that could impact project works

5.1.5 Potential weak seams such as bentonite or soluble gypsum layers

5.1.6 Geologic artesian sources (geothermal, high abutments, etc.). Do not include artesian pressures due to normal dam seepage.

5.2 Seismicity

5.2.1 Map of fault traces that effect project. Differentiate between those traces that have been confirmed by trenching or other means and those that are inferred from other means.

5.2.2 Table of fault, distances, depths, magnitude at fault, PGA at site, etc. including local (floating or random crustal) earthquake.

5.2.3 Site MCE and DBE development

5.2.4 Time history of adopted earthquakes

5.2.5 Response spectrum used in analyses

5.2.6 Historic earthquake centers map

The USGS website (<http://neic.usgs.gov>) includes information on seismicity and may be a useful reference.

6.0 Hydrology and Hydraulics

Provide supporting information to document the development of the Probable Maximum Flood (PMF) and the routing of the PMF through the reservoir and project spillways. In general, this information will come directly from existing sources such as prior Part 12D Inspection Reports or company reports. The following information that should be included as applicable:

6.1 Hydrology

6.1.1 Hydrometeorology report used

6.1.2 Probable Maximum Precipitation for general and local storms

6.1.3 Drainage basin description including drainage area

Chapter 14**Monitoring the Performance of Dams**

- 6.1.4 Antecedent conditions
- 6.1.5 Loss rates
- 6.1.6 Basin and sub-basin precipitation/runoff models
- 6.1.7 Unit Hydrograph
- 6.1.8 Reservoir inflow and outflow hydrographs for the PMF event
- 6.1.9 Floods of record including highest flood flows and reservoir elevations
- 6.2 Hydraulics – Dams
 - 6.2.1 Project discharge-rating curves (For multiple gate spillways, outlet structures, powerhouse units, and emergency/fuse plug spillways, include the contribution of each component as well as the total capacity. Include the equations used to develop the curves including overtopping and orifice flow where appropriate).
 - 6.2.2 Tailwater rating curve (Compare to dam break studies)
 - 6.2.3 Normal and IDF freeboard without wave action
 - 6.2.4 Zero freeboard flood capacity (without wave allowance)
 - 6.2.5 Inflow Design Flood (based on dam break) The pertinent information from dam break analyses necessary to support the determination of the IDF should be included
 - 6.2.6 Reservoir Probable Maximum and Inflow Design Flood outflow hydrographs and corresponding reservoir levels
 - 6.2.7 Freeboard for general and thunderstorm events
 - 6.2.8 Stilling basin or plunge pool design flood flow
 - 6.2.9 Operating rule curve (if storage reservoir) including license restrictions on storage levels by season
- 6.3 Hydraulics – Water Conveyance Systems
 - 6.3.1 Hydraulic capacity of water conveyance system(s)
 - 6.3.2 Normal operating freeboard
 - 6.3.3 Spillway discharge rating curve(s)
 - 6.3.4 Summary of transient analysis

7.0 Surveillance and Monitoring Plan

This section is to include drawings and/or sketches showing the location of each active instrument. Include cross-sections of project structures showing instrument tip elevation, ground elevation and readout point location. See Chapter IX, Instrumentation and Monitoring, of the FERC Engineering Guidelines for the Evaluation of Hydropower Projects for additional discussion.

Note: time versus reading graphs for each instrument will be included only in the Part 12D Inspection Report, not in the STI.

- 7.1 Plans, sections, and details of active or useful reference instrumentation

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If a unit has been abandoned or replaced, but the historic data is still being used for safety evaluations, include the appropriate information for the record

- 7.2 Reading frequency for each instrument (reading procedures should not be included in this document)
- 7.3 Procedures for resolving spurious readings
- 7.4 Tabulated Data for each instrument (may be included on CD in Excel format)
- 7.5 Type of instrument (pneumatic/vibrating wire piezometer, Parshall flume, gape gage, inclinometer, etc)
- 7.6 Predicted value for each instrument (threshold values are values used in design or analysis of project structures)
- 7.7 Historic range of readings for each instrument
- 7.8 Threshold and Action level for each instrument

8.0 Stability and Stress Analyses of Project Structures

Because every dam and hydroelectric project is unique, it is not possible to list here all the various items that are required to adequately detail stability or stress assessments of the project water retaining structures. It will be the responsibility of the Licensee to include all information necessary for the reader to understand the assumptions, methods of analysis, and load cases assessed for each project structure. Stability and stress analyses for each structure shall be summarized graphically for ease of understanding.

The following types of information should be provided:

8.1 General

- 8.1.1 Listing of credible load cases analyzed (including water levels for dam, canal and flume analyses or pressure for penstock and flowline analyses)
- 8.1.2 Statement of the method of analysis used and the computer program adopted.
- 8.1.3 Properties of materials based on site specific tests or assumptions (state which). Include representative test data and summary sheets.

8.2 For each gravity structure and load case:

- 8.2.1 Graphic free body diagram (cross-section) of each structure showing:
 - the assumed self weight of the cross section
 - all applicable loads including, as appropriate:
 - assumed uplift pressure distribution
 - silt loads
 - headwater and tailwater loads
 - point loads
 - ice load
- 8.2.2 Key elevations
- 8.2.3 Key lateral dimensions
- 8.2.4 Piezometer and drain locations
- 8.2.5 Foundation shear strength parameters

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- 8.2.6 Minimum cohesion to meet stability criteria
- 8.2.7 Negative crest pressures
- 8.2.8 Concrete unconfined and splitting tensile strength test results
- 8.2.9 AAR potential or evidence
- 8.2.10 Failure planes investigated, etc.
- 8.3 For each embankment structure and load case:
 - 8.3.1 Graphic cross-section showing
 - embankment zoning
 - phreatic surface by load case
 - critical failure surfaces
 - key elevations
 - key lateral dimensions
 - slopes
 - headwater and tailwater elevations
 - relief wells, drainage layers, cutoff trenches, slurry walls, etc
 - 8.3.2 Potential for uncontrolled seepage at toe
 - 8.3.3 Summary of liquefaction analyses
 - 8.3.4 Summary of deformation analyses
 - 8.3.5 Procedures used to determine soil types and properties, etc.
 - Soil Classification
 - Atterberg limits
 - etc.
 - 8.3.6 Procedures used to determine soil strengths
 - Triaxial Tests (type and loadings)
 - Standard Penetration Tests
 - Cone Penetration Tests
 - Becker Hammer Tests
 - etc.
- 8.4 For each arch dam load case:
 - 8.4.1 Finite element mesh
 - 8.4.2 Stress contours
 - 8.4.3 Vector diagrams
 - 8.4.4 Thrust block stability and joint sterionets
 - 8.4.5 Pulsating load potential, etc.
- 8.5 For each water conveyance system that has a highlighted PFM
 - 8.5.1 Stress and stability analyses
- 8.6 Summary table of factors of safety for each structure and load case, with required value.

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For embankment structures and overburden foundations, the material strengths used in the stability analyses should be properly identified i.e. effective stress or total stress. The methods used to determine/estimate pore pressures, such as flow nets or field measurements, should also be described.

For gravity structures, it is useful to provide a spreadsheet of the key numbers from the analysis.

9.0 Spillway Gates

For each spillway gate type, include the following information:

- 9.1 Table of material properties (steel type, trunnion bearing type and friction properties, etc).
- 9.2 A summary of the stress analysis computations
 - 9.2.1 Graphic of gate model used for stress analysis
 - 9.2.2 Table of critical stresses in each member for each load condition.
- 9.3 Trunnion, wheel, or other lubrication procedures, schedule, etc.
- 9.4 Summary of gate hoist motor load tests to date (motor name plate rating, line-line voltage, amperage draw, reservoir level, and initial draw if available)
- 9.5 Spillway gate detailed inspection report

10.0 Pertinent Correspondence Related to Safety of Project Works

Include the most recent FERC Annual Operation Inspection Report. Include any major correspondence from FERC or State Dam Safety Agencies related to outstanding dam safety issues for the project.

11.0 References

List of references available for review of dam safety issues and that were used to assemble this document.