Procurement Doc. No. F-741-048, Rev. F (08-21-24). Process Owner: DAO, General Services. Downloaded or printed copies are for reference only. Verify this is the current version prior to use. See Valley Water's Procurement intranet website for released version.

INSTRUCTIONS

A. PURPOSE

The Request for an Exception to the Competitive Procurement Process is used to justify a single or sole source acquisition over the financial commitment threshold defined in the Board Approved Executive Limitations (Currently $50,000). Use this form to document justification for non-competitive procurements per EL-5.4.

B. DEFINITIONS

- **Sole Source**: A non-competitive method of procurement used when only one supplier possesses the unique ability or capability to meet the particular requirements of the entity or because only one supplier is practicably available. The entity may require a written justification from the end user explaining why only this supplier can fulfil the requirement. Only one firm exists that can provide the service, supply, or equipment, and there is not an available equivalent to meet Valley Water's minimum needs.
- **Single Source**: A procurement decision whereby purchases are directed to one source because of standardization, warranty, or other factors, even though other competitive sources may be available. Such an unusual and compelling urgency exists that Valley Water would suffer substantial harm, unless it is permitted to acquire the service, supply, or equipment on a non-competitive basis.

1. **PRIOR TO COMPLETING THIS FORM PLEASE ENGAGE THE PURCHASING OR CONTRACTS SPA EITHER VIA EMAIL, TELEPHONE, OR IN PERSON AND DISCUSS THE PROPOSED REQUEST. PLEASE OBTAIN VERBAL APPROVAL FROM THE BAO PROCUREMENT DESIGNEE PRIOR TO COMPLETING THE FORM OR CONTACTING THE VENDOR**.

   The reason for this discussion is to maintain eligibility of the vendor. If the request is not approved and later when the vendor must compete for the bid, the company will still be eligible. If one vendor has more information than other vendors because of our contact, the process may not be competitive and fair to all bidders. Complete the form to document the justification for the single or sole source. The unit requesting the sole source or single source must complete this form and attach any other documentation supporting the request.

2. Submit this form via DocuSign with supporting documents. Requester submits to their first level manager (minimum Unit Manager); second level manager (minimum unclassified); IT Deputy Operating Officer if IT related, Supervising Program Administrator for Consultant Contracts or Supervising Program Administrator for Purchasing (copy only); DAO, General Services; Senior Procurement Technician for tracking. For your convenience, you can utilize a DocuSign template to route this form for approvals. The template is searchable in DocuSign as "Exemption from Competitive Procurement Process (F-741-048)".

3. Complete the Requesting Unit Contact Information, the Vendor/Firm and Product Information, and the Justification Memo sections.

4. Prepare a Justification Memo (FC 1954) for Sole/Single Source Procurement (F-741-048). The Justification Memo must include all specific and comprehensive information. Prepare the Justification Memo as follows:

   a. From: The Requestor To: DAO, General Services

   b. Subject: Include a reference to the standard and product or service

   c. Answer all questions with simple, clear and concise responses.

   d. If both standards apply, include responses to the instructions and questions under both standards. The best evidence that supports the vendor as a sole source is a letter on a manufacturer's or developer's letterhead stating that fact.

5. Add Price Analysis information. Sole/single source procurements are subject to price evaluation. You do not solicit bids. An explanation of why you believe the price to be reasonable is usually adequate; include the basis for your evaluation.

6. The **Recommendation** must be reviewed and signed off by the Requestor/PM, 1st Level Manager and 2nd Level Manager (AO or DOO).

7. The **Approval** must be reviewed and signed off by the DAO for Procurement, General Services Division regarding whether the justification meets the requirements stated in EL-5.4.

8. All parties of the approval for the justification must sign the **Disclosure Statement**.

9. Allow up to five (5) business days for its review, determination, and return to the requestor.

10. **Important Note**: This form is not required for any services, goods, materials, or software on the "Approved Single/Sole Source List" posted on the purchasing unit's intranet web page located at https://aqua.valleywater.org/node/16965. For services, goods, materials, or software not on the approved list, complete this form and justification memo.

JUSTIFICATION FOR EXEMPTION FROM COMPETITIVE PROCUREMENT PROCESS

REQUESTING UNIT CONTACT INFORMATION

Name of Requester:	Extension:
Hossein Morshedian	2667
Unit Name:	**Unit No.:**
Dam Safety and Capital Delivery Unit	595

VENDOR/FIRM AND REQUEST INFORMATION

Vendor/Firm Name:
Geosyntec Consultants, Inc.

Address:
1111 Broadway, 6th Floor Oakland, CA 94607

Contact:	Telephone No.:
Christopher Hunt, PhD, PE, GE	(510) 285-2748
Email:	
chunt@geosyntec.com	

Estimated Cost: $ 825,000.00

Type of Purchase:

- ☐ Commodity (Goods, Materials, Equipment)
- ☐ Information Technology (Non-Prof. Srvs) (IT-Related Hardware-Equipment, Goods, Accessories, Software including maintenance and renewals)
- ☐ Information Technology Projects (Prof. Srvs) (IT-Related Selection & Implementation Support Services that include Software and Licenses
- ☐ All Apply
- ☐ General (Non-Professional) Services
- ☒ Consultant (Professional) Services
- ☐ Other

Describe the type of purchase (commodity or service):

The Federal Energy Regulatory Commission (FERC) has required Anderson Dam to complete a Comprehensive Assessment as part of its 2026 Part 12D Inspection, which must follow FERC's established evaluation guidelines for hydropower projects. The Dam Safety Unit plans to engage Geosyntec as a single-source contractor beginning in Fiscal Year 2026 to conduct this mandatory inspection. FERC regulations require an Independent Consultant to thoroughly examine all essential project infrastructure, including the dam itself and all related structures, to ensure compliance with federal safety standards.

JUSTIFICATION FOR EXEMPTION FROM COMPETITIVE PROCUREMENT PROCESS

JUSTIFICATION CHECKLIST

Check the appropriate statement[s] below and answer the associated questions in a separate memorandum to the BAO or designee which shall accompany this form in DocuSign.

☐ **Sole Source**: EL 5.4.11 provides: The best interest of Valley Water cannot be served through a competitive procurement because only one firm exists that can provide the service, supply, or equipment, and there is not an available equivalent to meet Valley Water's minimum needs.

1. *Explain why this is the only commodity or service that will meet those minimum needs.*
2. *Describe the consequences of not meeting those needs.*
3. *Which vendors were contacted and what steps were taken to verify that the commodity or services are not available from another source?*
4. *Describe the effort undertaken to identify whether other vendors can meet Valley Water's minimum needs, including a list of the names and contact information of the vendors and the reasons why they cannot meet Valley Water's needs.*
5. *Attach evidence that supports the vendor is the only source that can provide the commodity or service.*
6. *Define any cost savings realized or cost avoided by using this vendor as well as confirm the reasonableness of pricing provided. Please attach pricing information to your memo.*

☒ **Single Source**: EL 5.4.1.2 provides: Valley Water's need for the service, supply, or equipment is of such an unusual and compelling urgency that Valley Water would suffer substantial harm, unless it is permitted to acquire the service, supply, or equipment on a non-competitive basis.

1. *Explain why Valley Water's need for the commodity or service is of such an unusual and compelling urgency so as to cause Valley Water to suffer substantial harm if it is procured on a competitive multiple-source basis rather than a single-source basis.*
2. *When was the need for the commodity or service first identified?*
3. *Describe the substantial harm Valley Water will suffer, including when that substantial harm occurs.*
4. *List the names and phone numbers of the vendors you contacted and the reasons for not considering them.*
5. *Define any cost savings realized or cost avoided by using this vendor as well as confirm the reasonableness of pricing provided. Please attach pricing information to your memo.*

ATTACHMENTS

☒ Justification Memo for single/sole source

☒ Additional support documents, if applicable

ROUTING INSTRUCTIONS

Sequence	Job Title	Name	Email
1	Requester/PM	Hossein Morshedian	HMorshedian@valleywater.org
2	1st Level Manager	Hemang Desai	HDesai@valleywater.org
3	2nd Level Manager (AO or DOO)	Ryan McCarter	rmccarter@valleywater.org
4	DAO for Procurement, General Services Division: Tony Ndah	Tony Ndah	tndah@valleywater.org
5	Purchasing & Contracts SPA (Purchasing-Z. Devine or Consultant Contracts-A. Fraumeni (copy only)	Alicia Fraumeni (Contracts)	afraumeni@valleywater.org
6	Senior Procurement Technician	Deb Codiroli	Purchasing@valleywater.org

JUSTIFICATION FOR EXEMPTION FROM COMPETITIVE PROCUREMENT PROCESS

DISCLOSURE STATEMENT

TO ACCOMPANY JUSTIFICATION FOR EXEMPTION FROM A COMPETITIVE PROCUREMENT PROCESS PER EL--5.4

As an individual involved in evaluation and/or in making a recommendation to the above-mentioned purchase, to the best of my knowledge, I have no conflicts of interest and attest that I:

- *Have not received any income or gifts from this company during the past 12 months.*
- *Do not have any financial interest in this company.*
- *Do not have any other type of business relationship with this company.*
- *Do not know of any member of my departmental staff to have a business relationship with this company.*

Please provide any additional information you believe should be disclosed at this time.

Requester/PM: Hossein Morshedian	DocuSigned by: Hossein Morshedian FA700AC012E84DA...	**Date**: 9/29/2025
1st Level Manager: Hemang Desai	DocuSigned by: Hemang Desai 21E7321E0F424C3...	**Date**: 9/29/2025
2nd Level Manager (AO, DAO, or DOO): Ryan McCarter	DocuSigned by: 8BA1DCE0E8B0474...	**Date**: 9/30/2025
BAO or BAO Procurement Designee: Tony Ndah	DocuSigned by: Tony Ndah A1088F9499254F3...	**Date**: 9/30/2025

RECOMMENDATION

I am aware of the Valley Water's requirements for competitive procurement and the EL-5.4 justifications for sole/single source procurement. I have researched and documented the required technical information and have made a thorough effort to review comparable/equal vendors/firms, equipment, and services. The information stated in this justification meets the Valley Water's EL-5.4 to the best of my knowledge.

Requester/PM: Hossein Morshedian	DocuSigned by: Hossein Morshedian FA700AC012E84DA...	**Date**: 9/29/2025
1st Level Manager: Hemang Desai	DocuSigned by: Hemang Desai 21E7321E0F424C3...	**Date**: 9/29/2025
2nd Level Manager (AO, DAO, or DOO): Ryan McCarter	DocuSigned by: 8BA1DCE0E8B0474...	**Date**: 9/30/2025

APPROVAL

I agree this transaction meets the requirements of EL5.3.12 and approve the exemption from a competitive procurement process based on the justification provided.

DAO for Procurement, General Services Division: Tony Ndah	DocuSigned by: Tony Ndah A1088F9499254F3...	**Date**: 9/30/2025

TRACKING

Senior Procurement Technician Sole/Single Source Number Assignment

Sole/Single Source Number: SS0036C	Initial DC	**Date**: 9/30/2025

Valley Water

Clean Water • Healthy Environment • Flood Protection

TO: Tony Ndah **FROM:** Hossein Morshedian

SUBJECT: Request for Single Source Purchase Request for 2026 Ninth Part 12D Comprehensive Assessment of Leroy Anderson Dam **DATE:** Sept 29,2025

Request

Valley Water Dam Safety Unit is currently seeking to request for Single Source for Geosyntec starting in Fiscal Year 2026. The Dam Safety Unit is using this service to inspect all primary project infrastructure, including dams and related structures under FERC regulations, by an Independent Consultant (IC).

Background

The Federal Energy Regulatory Commission's October 22, 2024 letter mandates that Anderson Dam undergo a Comprehensive Assessment (CA) for its 2026 Part 12D Inspection, following procedures outlined in Chapter 16 of the FERC Engineering Guidelines for the Evaluation of Hydropower Projects. This thorough evaluation involves comprehensive review and analysis of design basis documents, supporting materials, monitoring instrumentation, performance data, and safety management systems. Additionally, the assessment must include on-site field inspection, Potential Failure Mode Analysis (PFMA), and Level 2 Risk Analysis (L2RA).

FERC regulatory requirements mandate that an Independent Consultant (IC) examine all critical project components, encompassing dams and ancillary structures. With Anderson Dam's designation as "High Hazard Potential" under FERC criteria, the final inspection report is required for FERC submission by August 24, 2026.

Justification

FERC employs stringent criteria for IC approval, and initial consultations revealed that Geosyntec represents the most viable candidate for authorization based on their extensive project knowledge and proven track record. Geosyntec has prepared the work scope for Anderson Dam's Ninth Part 12D Safety Inspection and associated hydroelectric infrastructure. This CA will follow revised FERC guidelines implemented on April 11, 2022. The proposed scope addresses Valley Water's requirements, incorporates review of existing dam documentation, and satisfies stipulations from FERC's October 22, 2024 correspondence.

Given that IC selection requires FERC's final authorization, sole source procurement is necessary for this engagement. Considering the urgent timeline of this extensive assessment, a Notice to Proceed target of August 1st has been set to maintain compliance with FERC's mandated deadline and project timeline.

The agreement stipulates that Geosyntec will deliver the following services at a cost of $825,000. The project timeline targets field inspection in February 2026 to meet the August 24, 2026 CAR submission deadline.

1- Project Review

1.1. Data Collection and Review: Comprehensive collection and evaluation of pertinent documentation including previous Part 12D reports, Supporting Technical Information Documents (STID), Dam Safety Surveillance and Monitoring Plans/Reports, design drawings, construction records, instrumentation data, hydrologic and hydraulic studies, geologic reports, and emergency action plans.

1.2. Calculations Review: Detailed examination of existing calculations with independent verification where necessary. Reviews will be conducted by appropriate Subject Matter Experts (SMEs) and documented in the CAR appendices following FERC Guidelines.

2- Supporting Analyses

2.1. Hydrologic Hazard Analysis: Development of hydrologic hazard curves using USACE Risk Management Center's Reservoir Frequency Analysis (RFA) and BestFit software tools. Analysis will characterize annual exceedance probabilities down to 10^{-6} using stochastic methods, incorporating data from multiple USGS stream gauges in the Coyote Creek watershed. Monte Carlo simulation through RMC-RFA will account for uncertainties in inflow volumes, hydrograph shapes, flood timing, and antecedent reservoir conditions.

2.2. Seismic Hazard Analysis: Probabilistic seismic hazard assessment utilizing the USGS 2023 National Seismic Hazard Model (NSHM) without modification. The analysis will provide seismic hazard curves and disaggregation information for peak ground acceleration and 21 periods between 0.01 and 10.0 seconds, including mean magnitude and distance contributions across various annual frequencies of exceedance.

2.3. Consequences Analysis: Implementation of LifeSim simulation software to evaluate life safety consequences, recommended given the time-sensitive nature of downstream Emergency Action Plans. The analysis will update existing 2020 dam breach models to include four scenarios: fair weather embankment failure at dead pool, spillway failure at full storage, PMF non-breach scenario, and PMF breach scenario. Focus areas include direct life loss and building damages using the National Structure Inventory with quality control through desktop aerial imagery review.

3- CA Pre-Inspection Preparation Report (CA-PIPR)

Preparation of the CA-PIPR to document initial findings from document review and calculations assessment, demonstrating IC Team readiness for field inspection and risk analysis. The report addresses potential project deficiencies, design/construction issues, analysis adequacy, project status, previous recommendation status, and instrumentation data interpretation. The final CA-PIPR must be submitted to FERC at least 30 days prior to field inspection.

4- Field Inspection

Comprehensive one-day field inspection of dam facilities, operating equipment, and monitoring instrumentation to observe conditions relating to previously identified Potential Failure Modes (PFMs) and identify new candidates. The inspection will examine evidence of settlement, movement, cracking, seepage, erosion, corrosion, or deterioration. Reservoir rim inspection will be conducted using recent drone footage provided by Valley Water. The IC Team includes specialists in structural engineering, hydrology/hydraulics, engineering geology, and tunneling, with comprehensive documentation through field notes and photographs.

5- PFMA and L2RA Workshops and Report

Combined ten-day workshop conducted by a qualified Facilitator to identify, develop, and assess potential failure modes. The process includes:

- Brainstorming: Identification of candidate PFMs for all project features under normal, flood, and seismic loading conditions
- Screening: Initial classification as Urgent, Credible, Financial/Damage State, Asset Management, Insufficient Information, Clearly Negligible, or Ruled Out
- Development: Detailed description of screened PFMs following FERC templates
- Likelihood Estimation: Blind elicitation polling for failure likelihood (FL1-FL7 categories) with confidence levels

- Consequence Estimation: Grouping of similar PFMs for streamlined consequence assessment
- Risk Reduction Measures: Discussion of potential mitigation strategies

The workshop utilizes MS Forms for polling management and custom spreadsheet tools for risk compilation and total dam risk estimation.

6- Comprehensive Assessment Report (CAR)

Preparation of the final CAR following Chapter 16 FERC Guidelines outline, incorporating all previous task findings. The report evaluates surveillance/monitoring programs, operations/maintenance procedures, emergency action plans, public safety plans, hazard potential classification, and analyses of record. Specific attention to spillway adequacy assessment and dam safety risk classification recommendation based on PFMA/L2RA findings. The CAR includes a comprehensive recommendations table with reasonable implementation timelines.

7- Project Management and Meetings

Coordination of team activities, staffing management, and facilitation of key project meetings including the 2nd Coordination Call with FERC, monthly Valley Water coordination calls, field inspection logistics coordination, and the mandatory CA Review Meeting within 60 days of CAR submission to discuss major findings and recommendations.

Attachments:

1. Justification for Exemption from Competitive Procurement Process (F-741-048)

Hossein Morshedian
Dam Safety Program Unit

JUSTIFICATION MEMO – SINGLE/SOLE SOURCE
FC 1954 (01-21-25)

TO: Tony Ndah, Deputy Administrative Officer

FROM: Hossein Morshedian

SUBJECT: Request for Single Source Purchase Request for 2026 Ninth Part 12D Comprehensive Assessment of Leroy Anderson Dam

DATE: September 26,2025

SUMMARY:

The Federal Energy Regulatory Commission (FERC) has required Anderson Dam to complete a Comprehensive Assessment as part of its 2026 Part 12D Inspection, which must follow FERC's established evaluation guidelines for hydropower projects. The Dam Safety Unit plans to engage Geosyntec as a single-source contractor beginning in Fiscal Year 2026 to conduct this mandatory inspection. FERC regulations require an Independent Consultant to thoroughly examine all essential project infrastructure, including the dam itself and all related structures, to ensure compliance with federal safety standards.

Justification:

FERC's October 22, 2024, mandate requires Anderson Dam to undergo a Comprehensive Assessment for its 2026 Part 12D Inspection, following stringent procedures outlined in Chapter 16 of FERC's Engineering Guidelines. This extensive evaluation must encompass comprehensive review of design documents, monitoring data, safety systems, on-site field inspections, Potential Failure Mode Analysis, and Level 2 Risk Analysis. Given Anderson Dam's "High Hazard Potential" designation, FERC requires submission of the final inspection report by August 24, 2026, creating an urgent compliance timeline that demands immediate action.

FERC's stringent criteria for Independent Consultant approval necessitates sole source procurement following extensive evaluation of potential candidates. Under FERC regulations, an Independent Consultant must be a licensed professional engineer with at least 10 years of dam design and safety experience, cannot be affiliated with the licensee or have been employed by them within two years, must lead a team with demonstrable expertise commensurate with the project's complexity, and must possess training based on new FERC guidelines implemented in April 2022.

Several major engineering firms were considered as potential candidates, including AECOM, GEI, Stantec, Black & Veatch, HDR, and…; however, these firms do not meet the Independent Consultant qualification requirements due to current or prior affiliations. Geosyntec turns out to be the only viable candidate from the list of the firms based on their extensive project knowledge, proven track record, existing familiarity with Anderson Dam's infrastructure, and compliance with all FERC Independent Consultant criteria. The IC selection process will require FERC's final authorization.

TOTAL COST:

The comprehensive assessment services will be delivered by Geosyntec at a total cost of $825,000, with the project timeline targeting field inspection activities in February 2026 to meet FERC's mandatory submission deadline of August 24, 2026.

ATTACHMENTS:

1. Justification for Exemption from Competitive Procurement Process FC 1959 (F-741-048)
2. Scope of Work for 2026 Ninth Part 12D Comprehensive Assessment of Leroy Anderson Dam

CONCUR:

DocuSigned by:
Hemang Desai
21E7321E0F424C3...

Hemang Desai
Dam Safety Program Unit Manager

9/26/2025
Date

DocuSigned by:
Tony Ndah
A1068F9499254F3...

Tony Ndah, P.E.
Deputy Administrative Officer
General Services Division

9/26/2025
Date

Geosyntec consultants

SCOPE OF WORK

FERC Part 12D Program

2026 Ninth Part 12D Safety Inspection of

LEROY ANDERSON DAM

Comprehensive Assessment

Submitted to:

Santa Clara Valley Water District

Valley Water

Clean Water • Healthy Environment • Flood Protection

June 4, 2025

Table of Contents

Appendices

BACKGROUND

The October 22, 2024 FERC letter indicates that the 2026 Part 12D Inspection for Anderson Dam is to be performed as a Comprehensive Assessment following the program described in Chapter 16 of the FERC Engineering Guidelines for the Evaluation of Hydropower Projects[1] (FERC Guidelines). CAs are in-depth evaluations of the project and include a detailed review and evaluation of analyses, design basis, reference documents, instrumentation and performance data, and dam safety program elements, and performance of a field inspection, Potential Failure Mode Analysis (PFMA), and Level 2 Risk Analysis (L2RA).

The revised requirements for PFMAs and L2RAs are outlined in Chapters 17[2] and 18[3] of the FERC Guidelines, respectively. The FERC regulations require that all principal works of the development, including the dams and associated appurtenant structures, be inspected by the IC. Anderson Dam is classified as “High Hazard Potential” under the FERC Guidelines. The inspection report for Anderson Dam is due to FERC by August 24, 2026.

Anderson Dam is located 0.8 miles east of Highway 101 (Cochrane Road exit), about 18 miles southeast of San Jose, and 2.5 miles northeast of the City of Morgan Hill, in Santa Clara County, California. Anderson Dam is located across Coyote Creek and creates the largest reservoir in the Valley Water system (Anderson Lake). The construction of Anderson Dam was completed in January 1951. It was initially constructed for the purpose of water supply. Reservoir storage is released primarily for groundwater recharge and to Valley Water treatment plants to produce potable water. The reservoir also provides supplemental storage for imported United States Bureau of Reclamation (USBR) entitlement water via the San Felipe Division. Secondary benefits include flood control, recreation, and environmental flows that maintain downstream habitat. In 1986, a small hydroelectric facility was placed into service about ¼ mile downstream of the dam to utilize energy available from the discharged flows.

Anderson Dam is a central core, zoned earth-rock embankment with a maximum height of about 240 feet (ft) from the streambed to the crest of the dam. The upstream and downstream slopes are approximately 2.5 horizontal (H): 1 vertical (V). The dam was

[1] FERC. 2023. *Engineering Guidelines for the Evaluation of Hydropower Projects. Chapter 16 – Part 12D Program.* Federal Energy Regulatory Commission. Revision 1, March 29.

[2] FERC. 2021. *Engineering Guidelines for the Evaluation of Hydropower Projects. Chapter 17 – Potential Failure Mode Analysis*. Federal Energy Regulatory Commission. December 16.

[3] FERC. 2021. *Engineering Guidelines for the Evaluation of Hydropower Projects. Chapter 18 – Level 2 Risk Analysis*. Federal Energy Regulatory Commission. December 16.

originally constructed to elevation (El.)[4] 641 ft and was 233 ft high but was subsequently raised in 1987 using compacted fill to accommodate the 1981 California Division of Safety of Dams (DSOD) HMR 36 Probable Maximum Flood (PMF). The crest is approximately 1,400 ft long and 25 to 43 ft wide at El. 647.3 ft. Anderson Reservoir provides 90,373 acre-feet (ac-ft) of storage when full to the spillway crest (El. 627.8 ft). At that level, the reservoir has a surface area of approximately 1,245 acres. However, the reservoir is currently restricted to dead pool El. 488.0 ft, approximately 139.8 ft below the spillway crest and 159.2 ft below the dam crest.

The spillway, located in the right abutment of the dam, is ungated with an ogee crest section and a concrete lined chute terminating in a dentated flip bucket. The spillway crest is at El. 627.8 ft. The spillway was enlarged in 1987 and 1988 to pass the PMF calculated by DSOD in 1981, which according to design documents has a peak inflow of 60,224 cubic feet per second (cfs) and outflow of 57,400 cfs. The updated PMF report by HDR (2013)[5] supersedes the DSOD HMR 36 flood with an HMR 58/59 based flood. The results of the study indicated that the peak inflow to Anderson Reservoir during the PMF is 107,000 cfs and the peak spillway discharge is 95,800 cfs, resulting in maximum water surface elevation of 652.5 ft and 5.3 ft of dam overtopping at the current dam crest elevation. Note that the HDR (2013) study was not based on a dead pool starting elevation.

At the end of the chute, the spillway drops off vertically about 10 ft into an unlined discharge channel, which is excavated in rock, and has a riprap protected bottom channel immediately adjacent to the end of the spillway. Riprap protected side slopes extend up to the base of the spillway floor (El. 537.8 ft ±) approximately 200 ft downstream. The unlined discharge channel leads downstream approximately 800 ft before it daylights into a section called “the falls” because a spectacular waterfall occurs during spills. The spillway has an extensive underdrain system consisting of 4-inch perforated lateral pipe drains connecting to a longitudinal drain consisting of 6-inch, 8-inch, and 12-inch perforated pipe. In 1999, the seepage underdrain system was modified by construction of two V-notch weirs which allows for independent and unrestricted measurement of flows beneath the spillway.

The upstream intake to the outlet pipe was replaced in 1988-1989 with a new sloping multi-port intake located on the left abutment, just downslope from the end of the new boat ramp. The multi-port intake allows water to be withdrawn from three different

[4] Unless otherwise noted, all elevations in this report refer to North American Vertical Datum of 1988 (NAVD88). SCVWD has converted to NAVD88 from United States Geological Survey (USGS) Datum, which is also referred to as National Geodetic Vertical Datum (NGVD29). For Anderson Dam, the NAVD88 datum is 2.8 ft higher than USGS/NGVD29 datum.

[5] HDR. 2013. *Technical Memorandum – Anderson Dam PMF Study Revision*. March 11.

elevations: El. 487.8 ft, El. 527.8 ft, and El. 562.8 ft, depending on the season and reservoir water temperature. The intakes are controlled by horizontally mounted sluice gates, each controlled independently by a hydraulic operator. The low-level outlet consists of a single 1,160-ft-long, 49 ⅛-inch inner diameter (ID) steel pipe, having a wall thickness of 5/16-inch, in an 18-inch-thick reinforced concrete encasement. The pipe passes beneath the center section of the embankment and has a capacity of 550 cfs.

The conveyance of water to the powerhouse is through the 54-inch Anderson Force Main (AFM). The AFM is a 0.8-mile-long, 54-inch-diameter concrete cylinder pipeline that conveys raw water to Anderson Reservoir via the Santa Clara Conduit, and from Anderson Reservoir to the Cross Valley Pipeline. The AFM connects to the low-level outlet pipe downstream of the dam before the outlet pipe discharges into Coyote Creek. The portion of the penstock between the AFM and the turbine intake reduces sequentially to 42-inch diameter, 36-inch diameter, 30-inch diameter, and finally 24-inch diameter. There are two 24-inch-diameter turbine intake pipes connecting to the penstock with 24-inch-diameter motor-operated butterfly valves.

The powerhouse was constructed in 1986 and is supplied by the 49 ⅛-inch-diameter outlet system and the 54-inch-diameter AFM. There are two Francis-type reaction turbines with a name-plate rating of 377 kW at 30 cfs and design head of 165 ft. The generators are each 4,160 Volt induction generators.

Valley Water is currently in the design and construction phases of the Anderson Dam Seismic Retrofit Project (ADSRP) and the Anderson Dam Tunnel Project (ADTP) to address dam safety deficiencies. The ADTP will include a new intake and a new outlet tunnel and release valving system. The ADSRP will modify the dam and raise the crest to gain additional freeboard to pass the updated PMF. Valley Water has designs for replacement of the entire spillway system as part of the ADSRP after completion of the new outlet tunnel, intakes, and dam modifications. The projects will greatly alter and improve the dam and appurtenant features in the coming years. Construction of the ADTP is underway, and ADSRP construction is currently scheduled to be completed in 2032.

SCOPE OF WORK

The initial task of the Part 12D process is the development of the Part 12D Inspection Plan. The purpose is to describe the scope of the inspection, propose the IC Team, demonstrate the qualifications of the proposed IC Team, describe the technical disciplines and level of expertise required to perform the field inspection, and establish the proposed schedule. Geosyntec is currently developing the Inspection Plan for Anderson Dam under separate work agreement with Valley Water. The scope of work outlined below

incorporates elements from the Inspection Plan but does not include effort related to development of the Part 12D Inspection Plan.

The scope of work for the remaining components of the Part 12D project have been divided into seven primary tasks. The project will begin in August of 2025 with the first three primary tasks to be completed in 2025, including: Task 1) project review, including initial data collection, document review, and detailed review of calculations; Task 2) perform required supplemental analyses in support of the Part 12D risk workshops (hydrologic hazard loading, seismic hazard loading, and consequences); and Task 3) preparation of the CA Pre-Inspection Preparation Report (PIPR). These first three tasks are critical for the demonstration to FERC that the IC Team is adequately prepared for the field inspection. To meet the August 24, 2026 FERC deadline, we propose that the field inspection (Task 4) occur in February 2026, followed closely by the Potential Failure Mode Analysis (PFMA) and Level 2 Risk Analysis (L2RA) workshops (Task 5). The IC Team will then prepare the Risk Analysis Report (RAR) as part of Task 5 and the Comprehensive Assessment Report (CAR) as part of Task 6. The final task includes effort related to project management and coordination, and several key project meetings including two with FERC: the 2nd Coordination Call at the start of the project and the CA Review Meeting after the CAR has been submitted.

As part of the ADSRP, Valley Water and the ADSRP design team continue to perform design for the planned retrofit. Formal review of the design documents for the ADSRP is beyond the scope of the Ninth Part 12D dam safety review for Anderson Dam, as it pertains to a project yet to be constructed. However, the IC Team will require sufficient documentation to provide general familiarization with the components of the ADSRP as this understanding may assist with discussion of risk reduction measures associated with the current dam.

In discussion with Valley Water, we understand that construction of the ADTP is underway and will be partially complete by the time of the early February 2026 Part 12D field inspection. As requested by Valley Water, the IC Team will include the constructed and in-place portions of the new tunnel at the time of the field inspection in the Part 12D inspection.

Details of the seven primary tasks are described in the sections that follow. Note the first two tasks have several parallel tracks and have therefore been subdivided for ease of project management and workflow.

Task 1) Project Review

Following receipt of notice to proceed (NTP) from Valley Water, Geosyntec will perform a detailed project review by initiating a data collection and review phase along with a

detailed assessment of calculations. This scope of work has been divided into the two subtasks described below.

Task 1.1) Data Collection and Review

In this task, Geosyntec will collect and review pertinent data and information for Anderson Dam and appurtenant structures. The document review will initially focus on identifying and reviewing the information necessary to prepare the CA-PIPR. Information to be reviewed includes data related to the design, construction, operations and maintenance, and previous inspections and analyses of the dam and appurtenant structures. The information consists of previous Part 12D reports, dam safety surveillance and monitoring plans and reports (DSSMP and DSSMR), Supporting Technical Information Document (STID), hydrologic and hydraulic (H&H) study reports, geologic and seismic hazard reports, structural stability reports, design and construction reports and drawings, and special inspection and study reports. The information to be collected and reviewed will include the following:

- Previous Part 12D Safety Inspection reports, including the three most recent reports.
- The status of all outstanding Part 12D recommendations.
- Initial PFMA reports and subsequent updates.
- Current STID.
- DSSMPs and DSSMRs since the previous Part 12D inspection.
- Instrumentation data and plots from the DSSMRs in digital form.
- Data on rainfall and reservoir levels, inflows and outflows, weir measurements, and spillway flows.
- As-built drawings and specifications of original construction and subsequent modifications, including information on the as-built materials, and an index of the drawings.
- Photographs, reports, and other records from construction.
- Design investigations and analysis reports.
- Operation and maintenance procedures and documentation, including a listing of modifications and maintenance activities since the previous Part 12D inspection.
- Reports of inspections, analyses, condition assessments, and operation and maintenance of the spillway, intake structure and low-level outlet.
- Reports of structural stability and stress analyses, geology and seismic hazard, hydrology and hydraulics, and other safety-related studies, including reports since the previous Part 12D inspections, as applicable.

- Electronic model files for stability, hydrology, and hydraulic evaluations (e.g. CFD and HEC-RAS files).
- Previous field and laboratory investigation reports and records, including reports since the previous Part 12D inspections.
- Pertinent correspondence between Valley Water and FERC and Valley Water and DSOD and inspections by FERC and DSOD.
- The Emergency Action Plan (EAP) for Anderson Dam.
- Documentation of Valley Water's Owners Dam Safety Program (ODSP).
- Documentation of the Public Safety Plan (PSP) for Anderson Dam.

We assume that Valley Water will provide access to the information and locate, gather, and scan the pertinent documents from their files. We assume that data and information will be provided in electronic format, with files that are titled and organized in a logical and informative way. Geosyntec's Project Manager will coordinate the distribution of documents for review to our SMEs.

The analyses of record will be reviewed with respect to their methodology, assumptions, and conclusions, in addition to the adequacy of their documentation in the STID. These evaluations will be documented in Sections 3, 4, and 8 of the CAR in accordance with Chapter 16 of the FERC Guidelines. Calculations requiring detailed review and the need for independent calculations will be identified as part of this task. We will also identify data gaps and calculations needed to perform the L2RA. The IC, Facilitator, SMEs, and project engineer will participate in the data review.

Task 1.2) Calculations Review

In this task, we will perform a detailed review of the calculations identified as part of Task 1.1 as needing review and other calculations identified during further document review. If needed, independent calculations will be performed as part of this review. The detailed reviews will be led by the appropriate SME for each type of analysis under the direction of the IC. The detailed review and independent calculations performed as part of this task will be documented in Sections 3 and 4 and in an appendix of the CAR, in accordance with Chapter 16 of the FERC Guidelines.

Task 2) Supporting Analyses

Evaluation of hydrologic hazard, seismic hazard, and consequences are important components for supporting screening and risk estimation as part of the PFMA and L2RA processes. We have included subtasks to perform the analyses required to obtain hydrologic hazard curves, probabilistic seismic hazard curves, and consequence

estimates for use in the PFMA/L2RA workshop. These analyses are described in detail below.

Task 2.1) Hydrologic Hazard Analysis

To characterize annual exceedance probabilities (AEPs), we anticipate that the hydrologic hazard analysis will need to go as low as 10^{-6}. We will use the US Army Corps of Engineers (USACE) Risk Management Center's (RMC's) Reservoir Frequency Analysis (RFA) and BestFit software tools to develop the hydrologic hazard curves (based on stochastic methods) and evaluate aleatory variabilities and epistemic uncertainties.

To do this, we will collect the hydrologic data for the project in general accordance with the recommendations contained in the USACE RMC Technical Report 2019-07, Data Sources for Estimating Hydrologic Hazards for Semi-Quantitative Risk Assessments[6], and use the unregulated daily average inflow, multiple inflow hydrographs for past floods, and daily average reservoir stage data for the records provided by Valley Water, USGS, and/or USACE. Based on a review of the USGS stream gauge network in the Coyote Creek watershed, the stream flow and stage data from the following gauges will be reviewed and potentially used to supplement the records provided by Valley Water to support hydrologic hazard curve development.

- USGS 11170000, Coyote C NR Madrone CA – Daily discharge records from 1960 through present day.
- USGS 11169860, Coyote C BL Coyote Res NR San Martin CA – Daily discharge records from 2017 through present day.
- USGS 11169800, Coyte C NR Gilroy CA – Daily discharge records from 1960 through present day.

Once the data collection phase is completed, Geosyntec will review data sources to identify potentially incorrect or poor-quality data that may result in inaccurate inflow volume and stage-frequency results. Additionally, we will assess the homogeneity of the data and confirm that the dataset represents an unregulated flow condition characterized by the inflow flows that would have occurred without upstream dams or reservoirs regulating the river. If a change in operation is identified during the period of record, only data consistent with the expected future operation will be used in the evaluation.

Using the compiled homogeneous data, we will calculate the median and upper and lower confidence limits for discharge/volume frequency curves using the RMC-BestFit tool. This tool performs goodness-of-fit tests for twelve probability distribution functions and

[6] USACE. 2018. *Data Sources for Estimating Hydrologic Hazards for Semi-Quantitative Risk*. United States Army Corps of Engineers. RMC-TR-2019-07. October.

generates statistical moments, including mean, standard deviation, skew, and kurtosis (depending on the best-fit function).

We will translate discharge frequencies to headwater stage frequencies using the Reservoir Frequency Analysis Software (RMC-RFA) developed by the USACE Risk Management Center. RMC-RFA is an event-based stochastic model that randomly generates and routes individual flood events through the reservoir to obtain a peak stage. The foundation of the RMC-RFA model is a level pool reservoir routing model, where the inflow minus the outflow equals the change in storage. The software employs Monte Carlo simulation to account for uncertainty in the inflow volume frequency curve, inflow hydrograph shape, the timing of floods, and the antecedent reservoir stage at the onset of a flood event. The main output of an RFA simulation is a hydrologic loading curve, or stage-frequency curve with uncertainty.

Details of the hydrologic hazard analysis approach, methodology, and findings will be documented in a standalone letter report that will be included as an appendix to the RAR and summarized in the CA-PIPR and CAR.

The hydrologic hazard analysis will be led by Mr. James Barbis. Mr. Barbis will develop and present a brief presentation of the hydrologic hazard analysis at the start of the PFMA/L2RA workshop (Task 5). Mr. Barbis will also serve as the H&H SME and will participate in the field inspection (Task 4) and during the PFMA/L2RA workshop (Task 5).

Task 2.2) Seismic Hazard Analysis

Geosyntec will perform a seismic hazard assessment in support of the PFMA/L2RA workshop. The following assumptions were made regarding the seismic hazard analysis:

- We will review past studies that characterize the seismic hazard for the site, including the seismicity section of the STID.
- We will develop probabilistic seismic hazard curves and associated disaggregation information for use in the risk assessment process.
- Development of the probabilistic seismic hazard curves will rely on a simplified approach in which the published values from the USGS 2023 National Seismic Hazard Model (NSHM) are utilized without modification. The 2023 NSHM provides seismic hazard curves, which display the annual frequency of exceedance for a range of ground shaking intensity levels, for peak ground acceleration (PGA) and 21 periods between 0.01 and 10.0 seconds.
- Disaggregation information from the 2023 NSHM will be provided in terms of the mean magnitude and mean distance (R_{RUP}) that contribute to the total mean seismic hazard across the range of annual frequencies of exceedance and are dependent on the natural period of interest for dynamic response.

Past seismic hazard studies reviewed in Task 1 and results from the 2023 NSHM probabilistic seismic hazard analysis (PSHA) will be documented in a standalone letter report that will be included as an appendix to the RAR and summarized in the CA-PIPR and CAR. Key deterministic seismic analyses (e.g., seismic stability and deformation) performed for Anderson Dam will be referenced to a return period from the PSHA.

The PSHA will be led by Dr. Christie Hale. Dr. Hale will develop and present a brief presentation of the seismic hazard analysis at the start of the PFMA/L2RA workshop (Task 5). For budgeting purposes, we have assumed Dr. Hale will otherwise have limited and virtual participation in the PFMA/L2RA workshop.

Task 2.3) Consequences Analysis

Geosyntec will perform a consequences analysis in support of the PFMA/L2RA workshop. FERC Chapter 18 states the case for consequences must be built as rigorously as for the failure likelihood and describes three general approaches for estimating life safety consequences: 1) descriptive approach, 2) empirical approach, and 3) simulation approach. FERC considers the simulation approach applicable if more detailed risk analyses are planned, for projects with time sensitive EAPs, and where results of the simulation could provide information useful to improving EAPs and warning and evacuation planning. Because the 2023 DSSMP notes EAPs downstream of Anderson Dam are time-sensitive, Geosyntec recommends the simulation software, LifeSim, as it may be useful in confirming or revising the EAP and helpful in developing more focused warning and evacuation plans going forward.

Importantly, consequence analysis relies heavily on hydraulic data inputs. Geosyntec understands that Valley Water completed an inundation study for Anderson and Coyote dams in 2020 using HEC-RAS version 5.0.7. The analysis included two failure scenarios for Anderson Dam and spillway and one cascading failure scenario of Coyote Dam and Anderson Dam:

1. Fair weather failure of the Anderson Dam embankment with reservoir at full storage at the spillway crest.
2. Fair weather failure of the Anderson Dam spillway (7-ft-high ogee weir and 25 feet of underlying erodible soils) with reservoir at full storage at the spillway crest.
3. A cascading failure of Coyote Dam and then Anderson Dam during a PMF event.

Geosyntec has reviewed the breach analysis model and the corresponding report and has confirmed that it includes information relevant to understanding each of the modeled breach scenarios including a description of the scenario, breach parameters, hazard occurrence times, loading assumptions, and outflows. We note that the cascading failure

scenario beginning with breach of Coyote Dam is inconsistent with the current scope of work focusing on a CA for Anderson Dam.

The following scenarios are noted that will be needed to support the L2RA workshop and consequence analysis:

1. Fair weather failure of the embankment at current dead pool reservoir level (as opposed to full storage condition analyzed in 2020).
2. Failure of the spillway at full storage (similar to analysis in 2020 inundation study; note that this is not a fair weather condition given dead pool starting elevation).
3. PMF non-breach scenario for Anderson Dam starting at dead pool and continuing to overtopping without breach (needed to establish non-breach conditions for incremental consequences assessment).
4. PMF breach scenario for the embankment starting at dead pool and leading to a breach during overtopping.

The cost estimate includes the level of effort to update the current dam breach models to account for these conditions. If preliminary findings during the CA process indicate the need to evaluate additional failure scenarios, Geosyntec can evaluate these scenarios as an additional service.

The following assumptions were made regarding the consequences analysis:

- Valley Water will provide approximate count and schedule of project personnel who could be in the impacted area, including during the ongoing tunnel construction.
- Valley Water will provide information regarding transient populations (e.g. recreationists; unhoused persons) in the potentially inundated area including population estimates for daytime and nighttime and location.
- Valley Water will provide the latest version of the EAP, inundation maps, hydraulic models (including current conditions of downstream creek improvements that may not be reflected in the 2020 inundation study models), and hydraulic modeling reports.
- Four hydraulic scenarios (described above) will be included as part of the consequence analysis.
- The consequence analysis will focus on potential direct life loss and building damages. Other economic, environmental, and indirect consequences are assumed beyond the scope of this analysis.

- The structure inventory will be based on the National Structure Inventory (NSI). Quality control of the NSI will be based on desktop review of aerial imagery and other publicly available data.
- Traffic simulation will not be completed as part of this analysis. However, discussion on assumed evacuation effectiveness in the absence of traffic simulation will be provided for context.
- LifeSim warning and evacuation parameters will be defined based on the USACE Mapping, Modeling, and Consequences Production Center Technical Manual for Dams. If possible, these parameters will be refined based on the EAP. Default LifeSim settings will be used for other parameters.

Details of the consequence analysis approach/methodology, life loss estimates, economic loss estimates, and other consequences will be documented in a standalone report that will be included as an appendix to the RAR and summarized in the CA-PIPR and CAR.

The consequence analysis will be led by Ms. Stephanie Owen. Ms. Owen will develop and present a brief presentation of the consequence analysis at the start of the PFMA/L2RA workshop (Task 5) and before the consequence estimation phase of the workshop. For budgeting purposes, we have assumed Ms. Owen will otherwise have limited and virtual participation in the PFMA/L2RA workshop.

Task 3) CA Pre-Inspection Preparation Report (CA-PIPR)

The information reviewed during Task 1.1 and the detailed review of calculations performed in Task 1.2 will provide the basis for preparing the CA-PIPR for Anderson Dam. The purpose of the CA-PIPR is to document the IC's initial findings based on review and evaluation of the available information and to demonstrate that the IC Team is adequately prepared for the field inspection (Task 4) and the PFMA and L2RA (Task 5). The CA-PIPR will be prepared following the outline provided in Chapter 16 of the FERC Guidelines and will specifically discuss the following items:

- Potential deficiencies in the previous description and/or understanding of the project works.
- Potential design or construction-related issues.
- Potential deficiencies (accuracy, relevance, current state-of-the-practice) in the analyses of record.
- Project status, including a list of recent modifications to the project works, operations, and the status of previous Part 12D recommendations.
- Review and interpretation of instrumentation data.

The CA-PIPR will be submitted electronically in draft form for review by Valley Water. The report will be finalized after addressing Valley Water review comments and will be submitted in electronic searchable format. The final CA-PIPR is due to FERC at least 30 days prior to the first IC Team activity (i.e., the field inspection).

Task 4) Field Inspection

The Part 12D field inspection will be conducted as the first FERC-recognized IC Team activity to observe the condition of the facilities, operating equipment, and monitoring instrumentation in accordance with the Part 12D Inspection Plan. The field inspection will be tailored to look at conditions that relate to previously identified PFMs, to identify new candidate PFMs, and to inform subsequent risk analysis. Participants will also look for changed or unexpected conditions such as evidence of settlement, movement, cracking, seepage/leakage, erosion, corrosion, or deterioration. The operating and maintenance and monitoring procedures, communication systems and protocols, and emergency response procedures will be discussed with the dam operations and maintenance personnel, as appropriate. In accordance with FERC requirements, we assume that Valley Water will operate equipment identified in the Part 12D Inspection Plan to check for operability during the inspection.

As part of the Part 12D inspection during a CA, the IC Team must inspect the condition of the reservoir rim. This inspection may occur by boat or aircraft, or with recent unobscured drone or satellite imagery. Geosyntec has assumed that Valley Water will provide recent (within the 12 months prior to the inspection) drone video footage of the full reservoir rim and will provide photographs and documentation from any special monitoring around the reservoir (e.g., landslide monitoring areas).

Prior to the field inspection, Geosyntec will prepare a health and safety plan and inspection checklist of the features and equipment to be observed. The checklist will include visual surveillance items identified in the existing PFMs. Advantage will be taken of Valley Water's existing visual inspection checklists to the extent possible. Geosyntec will document the inspection and observations with field notes and photographs, which will be used in preparation of the CAR (Task 6).

Members of the IC Team anticipated to participate in the field inspection include the IC, Project Manager/Engineer, Facilitator, Structural SME, H&H SME, Engineering Geology SME, and Tunneling SME, together with representatives of Valley Water (including operations and maintenance staff, as appropriate). Out-of-state members of the inspection team will mobilize to the San Francisco Bay Area the day before the field inspection. We have assumed that the inspection for the dam and appurtenant facilities will be performed in one day. It is assumed that the dams and appurtenant facilities will be readily accessible, and that Valley Water will provide access to the facilities to be

inspected, and appropriate personnel to support the inspection, operate equipment and facilities, and answer questions.

Task 5) PFMA and L2RA Workshops and Report

For efficiency, we propose that the PFMA and L2RA be combined as a single extended workshop. Per the FERC Guidelines, the PFMA/L2RA workshop will be conducted independent of previous PFMAs and updates. Under the Facilitator's supervision, pre-workshop preparation materials will be prepared to efficiently guide workshop execution. These will include a PowerPoint slide presentation, a PFM tracking spreadsheet, and PFM templates tailored for the project. The PFMA/L2RA workshop attendees will be provided a copy of the CA-PIPR (Task 3) and the hydrologic hazard, seismic hazard, and consequences reports (Task 2) in advance of the workshop. The Facilitator will also hold a PFMA/L2RA virtual planning meeting with the team, including representatives from Valley Water, prior to the workshops to familiarize the participants with the PFMA/L2RA process and workshop logistics.

The combined PFMA/L2RA workshop will be conducted as follows:

- **Workshop Introduction**: The PFMA/L2RA workshop will start with a brief presentation to familiarize participants with the PFMA/L2RA process and expectations. Brief presentations will also be made with a summary of key observations from the field inspection, an overview of flood loading (Task 2.1) and seismic loading (Task 2.2), and an overview of breach models and associated consequences (Task 2.3).
- **Brainstorming**: After these initial presentations, a PFM brainstorming session will be held to identify candidate PFMs. Candidate PFMs will be identified for all project features and components using the expanded definition of failure in Chapter 17 of the FERC Guidelines, and organized by feature and loading condition (normal, flood, and seismic).
- **Screening**: Each PFM will be initially screened as part of the PFMA as either Urgent[7], Credible, Financial/Damage State, Asset Management[8], Insufficient Information[9], Clearly Negligible, or Ruled Out. Urgent, Credible, Financial/Damage State, and Insufficient Information PFMs will be carried forward to the next step.

[7] Valley Water must follow up on Urgent PFMs with FERC within seven days of identification.

[8] FERC recommends that asset management PFMs be carried forward into the risk analysis; however, these PFMs are generally considered low priority during a PFMA/L2RA workshop and will be discussed with Valley Water prior to a decision on further development.

[9] The IC Team may be unable to fully develop or estimate Insufficient Information PFMs; however, the IC Team will endeavor to both minimize the occurrence of Insufficient Information PFMs and to develop those that cannot be estimated to a sufficient level that the IC can evaluate appropriate recommendations for gathering the missing information. If a PFM can be estimated, it is not considered to fall in the Insufficient Information category.

- The following steps are carried out from start to finish before moving on to the next PFM:
    - **Development**: Candidate PFMs that pass initial screening will begin the development process and be described in accordance with the FERC Guidelines and in general conformance with the template provided in Appendix 18-C of the FERC Guidelines. Portions of the development process of each PFM may be informed by relevant work on previously developed PFMs. At any point during the PFM development process, a PFM may be screened out if the IC Team concludes that the PFM is insignificant (i.e., considered so remote as to be negligible), at which point no further development of that PFM will be performed, although the results of the initial and refined screening will be documented in the RAR as described below.
    - **Likelihood of Failure Estimation**: Once a PFM has been developed to a sufficient level to allow likelihood of failure estimation, the Facilitator will launch a poll for the estimators for blind elicitation. The poll will collect the name and expertise of the estimator, their assigned order of magnitude estimate for likelihood of failure (FL1 through FL7)[10] along with a brief rationale, and their assigned confidence in their estimate (High, Moderate, or Low as defined in Chapter 18 of the FERC Guidelines) along with a brief rationale. Polling results will be presented and discussed, and an attempt will be made to select a consensus estimate. Estimators will be provided an opportunity to change their estimate following discussion, and if a consensus is not achieved, dissenting estimates and associated rationale will be recorded.
    - **Risk Reduction Measures**: Following likelihood of failure estimation, the participants will discuss potential risk reduction measures, which will be recorded for future consideration by the IC as part of the CAR.
- **Consequence Estimation**: Following development and estimation of likelihood of failure for all PFMs, the consequences analysis (Task 2.3) will be revisited to refresh participants in advance of the consequences estimation process. To streamline consequence estimation, the Facilitator will lead a discussion of groupings of PFMs that have similar consequences (e.g., PFMs resulting in breach of a dam at the same or similar location). Once groups of PFMs are identified, they will be revisited one at a time to elicit an agreed-upon estimate and confidence level of consequence. If consensus cannot be achieved, dissenting estimates and associated rationale will be recorded. Urgent and Credible PFMs with life safety consequences will be discussed first, followed by Financial/Damage State PFMs with financial consequences.

[10] Chapter 18 of the FERC guidelines defines seven failure likelihood categories using verbal descriptors and order of magnitude annual failure likelihoods. The categories range from FL1 (negligible or an annual failure likelihood less than 1/1,000,000) to FL7 (imminent/extremely likely or an annual failure likelihood greater than 1/10).

- **Findings and Understandings**: At the end of the workshop, participants will provide their views of major findings and understandings developed from the workshop. A summary of the major findings and understandings will be included in the RAR.

Polling during the PFMA/L2RA will be managed using the MS Forms application (or similar), with polling questions for each PFM prepared in advance of the workshop (modification of polling questions is possible during the session). A custom-built spreadsheet tool will be used to compile and track the results of risk elicitation during the workshop and to estimate total risk for the dam.

The IC Team will include the Facilitator to moderate the PFMA/L2RA workshop, and a recorder and note taker to record the discussions and findings of the workshops in real time. Other members of the IC Team that will participate full-time in the workshops include the IC, the Structural SME, and the Engineering Geology SME. The workshops will be organized to engage selected technical support team members on a part-time basis. Such team members will include the H&H and Tunneling SMEs, who we anticipate will participate full time during in-person workshop days and part-time during virtual workshop days, and the Seismic and Consequence SMEs, who will participate in all workshops remotely and as needed. We assume that Valley Water will provide their own SMEs including dam safety, engineering, and operations staff to participate in the workshops. Other participants will include the FERC representatives. We have assumed that selected Valley Water SMEs will also serve as risk estimators, where appropriate. An initial list of estimators and their technical specialties will be agreed upon with Valley Water and provided to FERC prior to the PFMA/L2RA.

We anticipate the PFMA/L2RA workshop will be conducted over ten workdays, with five of the days in-person and five of the days in a virtual session. Based on our experience, two weeks should be sufficient for the PFMA/L2RA workshop. We have not included contingency days within the current budget, but we have included a contingency week in the schedule for deliverable planning purposes. We have also assumed that there will be a three week gap between the in-person and virtual workshop sessions to allow time for organization and limited preparation of PFMs to increase efficiency of the process. For budgeting purposes, we have assumed 5 days of effort and expenses to hold the in-person sessions at the Valley Water offices in San Jose[11], and 5 days of effort for the virtual sessions.

Discussions and conclusions of the PFMA/L2RA workshop will be documented by the recorder and note taker and used to prepare a combined RAR following the example RAR

[11] The in-person workshop could alternatively be hosted at a Geosyntec office in Oakland or Walnut Creek at Valley Water's request.

Outline provided in Chapter 18 of the FERC Guidelines. The RAR will be included as an appendix in the CAR (Task 6).

Task 6) Comprehensive Assessment Report (CAR)

A Part 12D CAR will be prepared for Anderson Dam by, and under the direction of, the IC. The report will be prepared following the outline provided in Chapter 16 of the FERC Guidelines and will present the IC's findings and recommendations from the safety review of the dam and appurtenant structures. As specified in Chapter 16 of the FERC Guidelines, the CAR will include a table of recommendations and a reasonable timeline for Valley Water to address each recommendation.

The CAR will be based on the CA-PIPR and will include the findings of the field inspection and PFMA/L2RA workshop, in addition to an evaluation of the surveillance and monitoring and operations and maintenance programs, EAP, PSP, ODSP, hazard potential classification, and analyses of record. In addition to reviewing the analyses of record, the CAR will evaluate the completeness and accuracy of the STID. The CAR will also include a description of major project components and a summary of the status of previous recommendations and studies.

The CAR will specifically evaluate and comment on the spillway adequacy, including capacity and structural stability under credible loading conditions. The design basis and construction records will be reviewed with respect to the current state-of-practice, the original design intent, and the current project operations. The CAR will include a discussion of the recommended dam safety risk classification (DSRC) based on the findings of the PFMA/L2RA workshop.

The CAR will be submitted electronically in draft form for review by Valley Water. The CAR will be finalized after addressing Valley Water review comments and submitted in electronic searchable format. The CAR is due to FERC before August 24, 2026.

Task 7) Project Management and Meetings

This task will allow for project management activities such as coordination of team activities and staffing, and communication and coordination of activities (e.g., the field inspection and PFMA/L2RA workshops) with Valley Water and our subconsultants.

As part of this task, we have assumed the IC and the PM will participate in the following meetings virtually:

- 2nd Coordination Call with Valley Water and FERC (2 hours; includes Facilitator).
- Monthly coordination calls with Valley Water (1 hour each).

- Field inspection coordination call with Valley Water approximately 30 days prior to the field inspection to discuss inspection logistics (1 hour, includes all field inspection participants).
- FERC CA review meeting with Valley Water to summarize and discuss the major findings, conclusions, and recommendations of the CAR (2 hours). The purpose of the CA review meeting is to provide the IC Team a chance to summarize their observations, findings, and overall project assessment; provide FERC a chance to clarify specific items based on their initial review; and provide Valley Water the opportunity to ask questions of the IC Team and FERC to assist in developing their plan and schedule to address the CAR recommendations. The IC Team will prepare presentation slides for the meeting following the outline provided in Appendix F of Chapter 16 of the FERC Guidelines. The CA review meeting must be held within 60 days after the submittal of the CAR to FERC.

SCHEDULE

Geosyntec has developed the proposed preliminary schedule provided in Appendix A. Except for the final CAR, deliverable due dates are determined by the date of the field inspection. The proposed schedule and deliverables were developed assuming the Part 12D field inspection will occur in February 2026. Geosyntec will work with Valley Water to finalize the dates in the proposed schedule and associated deliverables to meet the August 24, 2026 deadline deliverable of the CAR to FERC. The IC team is prepared to begin work immediately after receiving NTP.

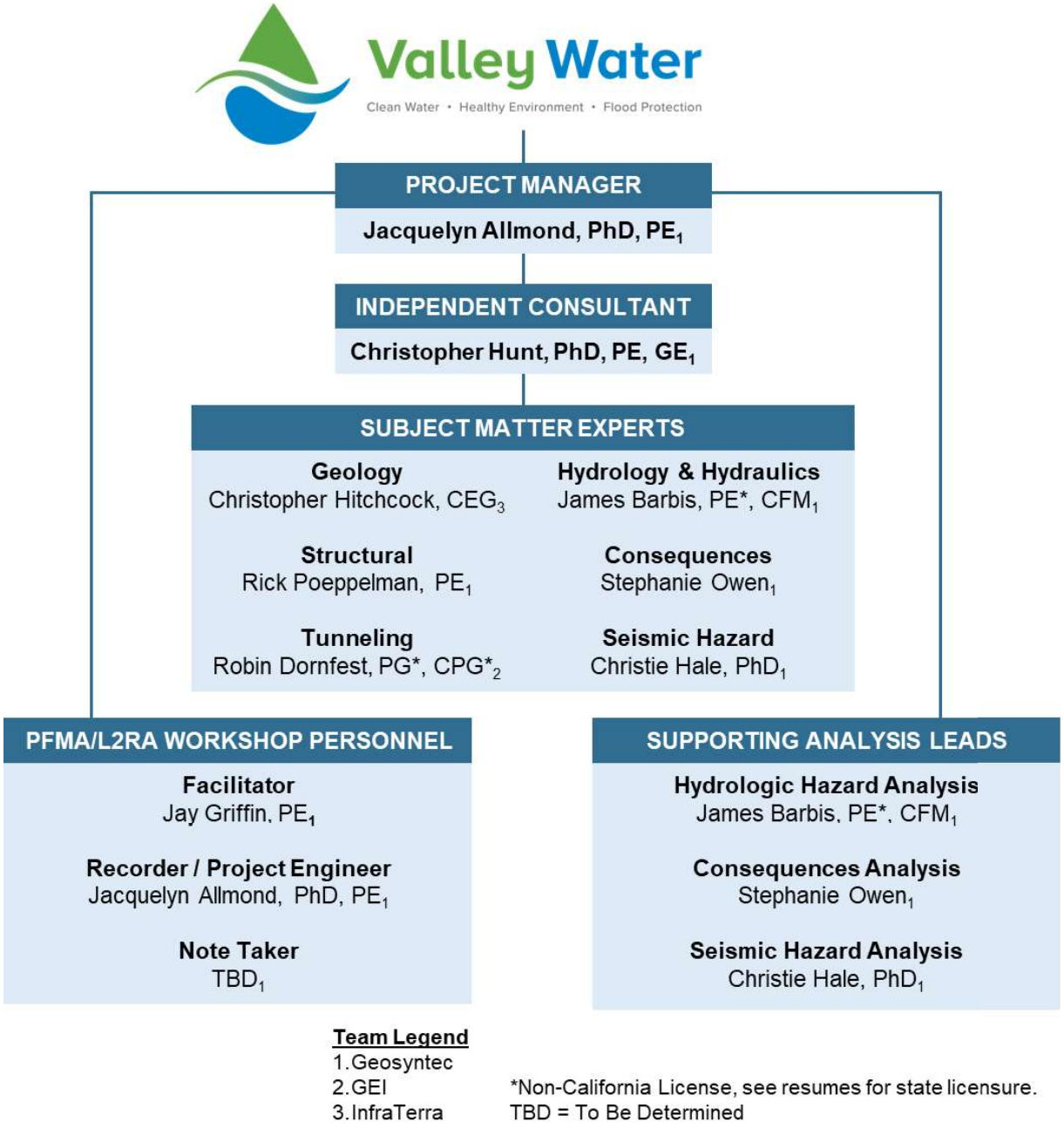
COST ESTIMATE

The cost estimate for the scope of work described above is included in Appendix B. The cost estimate was formulated on a time and materials basis in accordance with Geosyntec's and our subconsultant's 2025 and 2026 rate schedules for engineering services, which are also included in Appendix B. The estimate is based on the anticipated level of effort required to perform the proposed tasks. In particular, should the PFMA/L2RA workshop take longer than planned, Geosyntec will submit a change order request for the additional anticipated effort.

PERSONNEL AND QUALIFICATIONS

For the Part 12D Comprehensive Assessment of Anderson Dam, Geosyntec has assembled a highly qualified team of SMEs in dam safety and related fields from within Geosyntec and our partners, GEI and InfraTerra. The IC and Geosyntec's support team have a long history of working with Valley Water on dam safety projects, including previous Part 12D dam safety inspections and PFMAs for Anderson Dam. Each team

member has been placed in a role corresponding to their strongest area of expertise. The project organizational chart below presents our proposed team structure including our IC, Project Manager, workshop personnel, supporting analysis leads, and various SMEs. The organizational chart is intended to give Valley Water the greatest possible advantage in providing the necessary interdisciplinary expertise and meeting the objective of satisfying its own requirements and those of FERC.



Key personnel are introduced below, along with examples of relevant project experience. Additional individual project experience is provided in the resumes included in Appendix C.

Independent Consultant and Geotechnical SME

Christopher Hunt, PhD, PE, GE will serve as the IC and Geotechnical SME for the FERC Part 12D Comprehensive Assessment of Anderson Dam. Dr. Hunt is a registered professional engineer and geotechnical engineer in California with over 25 years of experience managing and supporting a variety of geotechnical projects, including safety reviews, seepage and seismic stability evaluations, and consequences assessments for multiple dams. Dr. Hunt has previously served as a facilitator for PFMAs for the Part 12D safety inspections of seventeen dams, including Anderson Dam, as a geotechnical SME during the recent CAs for two dams owned and operated by DWR, as facilitator for the CAs for two dams owned and operated by PG&E, and as the geotechnical member of a Director's Safety Review Board (DSRB) for three other DWR dams.

Project Manager, Project Engineer, and Workshop Recorder

Jacquelyn Allmond, PhD, PE will serve as the project manager, project engineer, and PFMA/L2RA workshop recorder for the FERC Part 12D Comprehensive Assessment of Anderson Dam. Dr. Allmond is a professional engineer registered in California with over 10 years of consulting experience in the areas of geotechnical and earthquake engineering. She has served as the technical lead and project manager for projects related to dams, levees, landfills, and other critical lifeline and infrastructure facilities. Dr. Allmond has managed Part 12D projects with multiple SMEs and subconsultants. Dr. Allmond participated in the Seventh Part 12D Safety Inspection and served as project manager and PFMA workshop recorder for the Eighth Part 12D Safety Inspection of Anderson Dam. Dr. Allmond recently served as project manager and project engineer for two FERC Part 12D Periodic Inspections in California for a concrete gravity structure with a gated ogee crest, a composite structure consisting of an earthfill embankment and concrete gravity overflow spillway section, and their associated power tunnel intake, penstocks, and powerhouse.

PFMA & L2RA Workshop Facilitator

Jay Griffin, PE will serve as the PFMA/L2RA Facilitator for the FERC Part 12D Comprehensive Assessment of Anderson Dam. Mr. Griffin is a professional engineer registered in California with over 14 years of experience on geotechnical and dam safety projects, including managing over 10 Part 12D safety inspections since 2018, and providing engineering support to the IC Team for the 2020 Part 12D Safety Inspection for Oroville Dam. He has served as project engineer and PFMA recorder for the Part 12D safety inspections of five PG&E dams since 2019. In 2024, he served as the project

manager and project engineer supporting the IC Team, PFMA/L2RA recorder, and co-author of the L2RA Report for the CA of PG&E's Wishon Dam and Haas Powerhouse and served as the project manager and note taker for the CA for PG&E's Courtright Dam. Mr. Griffin has completed USSD's "Leveraging PFMA to Perform SQRA" training and "Fundamentals of Facilitating a Semi-Quantitative Risk Analysis" training.

Subject Matter Experts

The team of SMEs that will support Dr. Hunt and participate in the PFMA/L2RA workshop will include personnel from Geosyntec and our subconsultants, InfraTerra and GEI. Our anticipated SME team will cover the following disciplines:

- Structural
- Hydrology and Hydraulics
- Seismic Hazard
- Consequences
- Tunneling
- Engineering Geology

The Geosyntec personnel proposed to serve in SME roles include Rick Poeppelman (Structural), James Barbis (Hydrology and Hydraulics), Christie Hale (Seismic Hazard), and Stephanie Owen (Consequences). Robin Dornfest of GEI is proposed to serve as the Tunneling SME. Christopher Hitchcock of InfraTerra is proposed to serve as the Geological SME. Brief descriptions of their relevant experience are included below.

Structural

Rick Poeppelman, PE is a registered professional engineer in California with nearly 40 years of experience in engineering for dams, hydraulic structures, and appurtenant works, as well as design team leadership for a wide range of infrastructure. He has applied his expertise in structural engineering to conduct numerous dam and spillway gate inspections, diverse structural analyses (e.g., SAP2000, GTSTRUDL), and review of complex designs of dams and their appurtenant works. He has been responsible for hundreds of multidisciplinary projects, including water resource plan formulation, design, construction, operation and maintenance, and emergency response. During his last 10 years at the USACE Sacramento District, Mr. Poeppelman served as the Chief of Engineering and Dam Safety Officer, responsible for the District's 17 dams in California, as well as the District's many water resource projects and other projects across 8 states. His experience includes risk-informed decision making, risk-informed plan formulation, and risk-informed design for multiple dam safety major modification projects. Mr. Poeppelman recently served as the Structural and Gates SME for the PFMA/L2RA

workshops for PG&E's Courtright and Wishon Dams. He is currently serving as Structural and Gates SME for PG&E's Belden and Almanor Dams.

Hydrology and Hydraulics

James Barbis, PE, CFM is a registered professional engineer in Pennsylvania, New Hampshire, Texas and New York, and a certified floodplain manager (CFM) in Pennsylvania. His expertise includes leading nuclear flood risk assessments and facility walk-downs, 1-dimensional and 2-simensional hydraulic modeling, extreme event hydraulic and hydrologic analyses involving Probable Maximum Precipitation (PMP) and Probable Maximum Flood (PMF) evaluations, storm sewer modeling (separate and combined), evaluation and certification of levees and flood control systems, dam break studies, dam assessment and rehabilitation design, Green Stormwater Infrastructure and drainage design, as well as flood hazard studies. He is experienced in dam safety assessment and dam/levee designs, which includes being an approved H&H engineering SME for FERC CAs and USACE Levee Reviews. He is currently serving as H&H SME for PG&E's Belden and Almanor Dams.

Seismic Hazard

Christie Hale, PhD has been involved in numerous seismic hazard analysis and seismic safety assessment projects. Her experience includes probabilistic seismic hazard analysis, disaggregation analysis, target spectrum development, Fourier transform and spectrum analysis, and development of site-specific ground motions. Dr. Hale has been supporting PG&E with continued development of their internal seismic hazard programs. In 2020, she performed a series of analyses to test and improve the implementation of the HAZ-45 seismic hazard code that is used by PG&E to perform seismic hazard assessments for many of their critical facilities. Additionally, she performed a series of comparative seismic hazard analyses to compare HAZ-45 with OpenQuake, a widely used open-source code. Dr. Hale recently served as the Seismic Hazard SME for PG&E's Courtright and Wishon Dams.

Consequences

Stephanie Owen has a background in economics and risk management and specializes in consequence analysis for dam and levee safety. Ms. Owen spent seven years working as a consequence SME with the USACE and has taught Consequence and LifeSim workshops for four years. She is experienced in comprehensive assessments, risk analysis, and estimating life loss and economic damage associated with upstream and downstream consequence areas, including the loss of project benefits such as power generation. Additionally, she has led several consequence elicitations with local, state, and federal agencies essential to understanding and recommending improvements to public safety plans and programs. Ms. Owen recently served as the Consequences SME

for PG&E's Courtright and Wishon Dams and is currently serving as Consequences SME for PG&E's Belden and Almanor Dams.

Tunneling

Robin Dornfest, PG, CPG is a Senior Vice President and Tunnel and Trenchless Practice Leader with GEI and former President and Founder of Lithos Engineering, a GEI Company. With over 26 years of experience, Mr. Dornfest is considered a technical expert in tunnel and trenchless engineering, geotechnical engineering, engineering geology, and construction management. Much of Mr. Dornfest's work focuses on tunnel and trenchless design, shaft design, slope stability evaluation and mitigation design, ground modification, earth retention systems including support of excavations, landslide and rock fall evaluation and mitigation, embankment dam design, and groundwater control system design. In addition, Mr. Dornfest focuses heavily on risk identification, allocation, and mitigation for underground construction projects. Mr. Dornfest specializes in evaluation of differing site condition claims for underground construction projects, provides third-party reviews, and regularly provides value engineering services to numerous client and project types. In addition, Mr. Dornfest serves as an expert witness and provides testimony related to his expertise. Mr. Dornfest was trained and worked in the Bay Area and is familiar with the geologic conditions and tectonic history of the project area.

Engineering Geology

Christopher Hitchcock, CEG has over 25 years of consulting expertise in the fields of seismic hazard, geologic site characterization, and engineering geology. Much of his research and applied project experience relates to geologic hazard and geotechnical site characterization for dam siting studies and hazard mitigation planning for geographically distributed water supply systems. His project responsibilities include project management, liquefaction assessments, probabilistic seismic hazard assessments, oversight of geotechnical drillings, monitoring of active landslides, aerial photography interpretations, surveying, and geologic mapping. Mr. Hitchcock has been a Principal or co-Principal Investigator on fourteen research projects sponsored by the U.S. Geological Survey's National Earthquake Hazard Reduction Program (NEHRP), the National Science Foundation (NSF), and the Southern California Earthquake Center (SCEC) to evaluate fault ruptures and liquefaction hazards. Mr. Hitchcock was Task Order Manager for providing continuing on-call geotechnical support to the California DWR under current (and past) contracts with Project Geology, including on-call support of dam and levee engineering for the Division of Engineering since 2004. He has served as an independent expert for evaluation of fault rupture hazards to DWR's water conveyance structures including pipelines, aqueducts, canals, and dams under review by the State of California DSOD.

Supporting Analysis Leads

In addition to serving as SMEs, James Barbis, Christie Hale, and Stephanie Owen will serve as the technical leads for the supporting H&H, seismic, and consequences analyses, respectively (Task 2).

CLOSING

Geosyntec looks forward to working with Valley Water and continuing to support dam safety projects for its facilities. Please contact Dr. Hunt at (510) 285-2748 if you have any questions or comments, or if you need additional information.

Geosyntec consultants

Appendix A

Schedule

Fri 6/6/25	Fri 6/6/25	0 days		
Sat 6/7/25	Fri 7/4/25	4 wks	8	
Sat 7/5/25	Fri 8/1/25	4 wks	9	
Fri 8/1/25	Fri 8/1/25	0 days	10	
Sat 8/30/25	Sat 8/30/25	1 day	11FS+4 wks	
Wed 8/20/25	**Wed 8/20/25**	**1 day**	**29SS-180 days**	**FERC 180d Deadlin**
Fri 8/1/25	**Fri 8/1/25**	**0 days**		
Fri 8/1/25	**Thu 8/28/25**	**4 wks**	**14**	
Mon 8/4/25	**Sat 1/17/26**	**167 days**		
Mon 8/4/25	Sun 11/2/25	13 wks	14	
Sun 11/2/25	Sun 11/2/25	0 days	17	
Mon 11/3/25	Sun 12/7/25	5 wks	18	
Mon 12/8/25	Sun 1/4/26	4 wks	19	
Sun 1/4/26	Sun 1/4/26	0 days	20	
Sat 1/17/26	**Sat 1/17/26**	**1 day**	**29SS-30 days**	**FERC 30d Deadline**
Mon 9/1/25	**Thu 11/27/25**	**88 days**		
Mon 9/1/25	Sun 10/26/25	8 wks	14SS+4 wks,15SS	
Mon 9/1/25	Sun 9/28/25	4 wks	14SS+4 wks,15SS	
Fri 10/3/25	Thu 11/27/25	8 wks	14SS+4 wks,15SS	
Mon 1/19/26	**Fri 2/20/26**	**33 days**		
Mon 1/19/26	Mon 1/19/26	1 day	29SS-4 wks	
Mon 2/16/26	Fri 2/20/26	5 days		
Mon 1/26/26	**Fri 4/10/26**	**75 days**		
Mon 1/26/26	Mon 1/26/26	1 day	32SS-4 wks	
Mon 2/23/26	Fri 2/27/26	5 days	29SS+7 days	
Sat 2/28/26	Fri 3/20/26	3 wks	32	
Mon 3/23/26	Fri 3/27/26	5 days	33FS+2 days	
Sat 3/28/26	Fri 4/3/26	1 wk	34	
Mon 4/6/26	Fri 4/10/26	5 days	35FS+2 days	
Sat 2/28/26	**Mon 8/24/26**	**178 days**		
Mon 3/30/26	Sun 6/7/26	10 wks	34FS+2 days	
Sat 2/28/26	Fri 6/26/26	17 wks	32	
Fri 6/26/26	Fri 6/26/26	0 days	39	
Sat 6/27/26	Fri 7/24/26	4 wks	40	
Sat 7/25/26	Fri 8/21/26	4 wks	41	
Fri 8/21/26	Fri 8/21/26	0 days	42	
Mon 8/24/26	**Mon 8/24/26**	**1 day**		**FERC Deadline**
Sat 8/22/26	**Wed 10/21/26**	**61 days**		
Sat 8/22/26	Fri 9/18/26	4 wks	43	
Sat 9/19/26	Sat 9/19/26	1 day	46	
Sun 10/18/26	Sun 10/18/26	1 day	47FS+4 wks