SECTION 01 69 50

SHUTDOWNS AND SITE ACCESS

PART 1 – GENERAL

1.01 SUMMARY

A. This specification is applicable to (a) shutdowns of pipelines and other water handling components/facilities and (b) hot work, testing, and Contractor activities for which Contractor site access may impact Operations' activities, impact performance of the water system, impact water deliveries to SFPUC customers, impact water treatment, or increase the risk of failure of other water components/facilities with the potential to impact the water system.

B. Work included under this Section:

1. Coordination of Pipeline and Facility Shutdowns

2. System Outage Requests ("SOR")

3. Access Request

C. Related Documents and Sections include:

1. SOR Form – see Appendix "A" to this Section

2. Access Request Form ("ARF") – see Appendix "B" to this Section

3. Section 00 73 02 – Contract Time and Liquidated Damages

4. Section 01 35 45 – Health And Safety

5. Section 01 32 16 – Construction Progress Schedule

6. Section 33 13 00 – Sanitary Work Practices, Disinfection, and Other Regulatory Requirements

1.02 DEFINITIONS

A. "Shutdown" is the closing of valves and/or the depressurizing and draining, de-energizing, disconnecting, or temporary decommissioning of pipelines or system components/facilities. A shutdown involves disconnecting and securing the system to prevent unauthorized activation during scheduled activities. A Shutdown is considered complete when the pipeline or component/facility has been returned to service. Shutdowns may affect a portion of a transmission system, a water treatment process, a component/facility, or an entire system.

B. "System Outage Request" or SOR is a request form and shutdown package made by the Contractor, through the City Representative, to the City to shut down a portion of the water system.

C. Access Request is a request made by the Contractor, through the City

Representative, to the City to access, test, or work near a portion of the water system or water treatment system.

D. "Contingency Plan" is the Contractor's plan, included with the SOR, for restoring the pipeline or system component and turning it over to the City such that full water transmission or treatment capacity can be restored in the event the shutdown is terminated.

1.03 CONTRACTOR'S GENERAL PLAN FOR WORK TO BE EXECUTED DURING SHUTDOWNS

A. The Contractor shall plan the work to be executed during shutdown(s) with sufficient logistics, personnel, material and equipment in order to complete the work within the specified time limits. The Contractor shall consider procuring extra materials (e.g., long-lead items) or providing extra or backup equipment as needed in case of damage or breakdown during the shutdown work.

B. The Contractor shall thoroughly plan all aspects of its on-site operations and coordinate with the City Representative to execute the work with minimal disruption to City operations, the public and the environment.

C. System Outage Request: The Contractor shall submit to the City Representative, a shutdown request using a SOR form.

D. The City will be responsible for the initial dewatering/decommissioning and the final refilling/disinfection which will be performed prior to restoration of service.

E. Contractor shall be responsible for maintaining the pipeline trench, if any. The Contractor's maintenance shall include de-watering, monitoring, and disposal/treatment of incidental leakage and any residual water from the isolated area during the shutdown. Estimated valve leakages are given in Article 1.09 of this Section.

F. Contractor shall be responsible for obtaining permits and executing notices for all water discharges associated with Contractor's work as per Section 33 13 00. Contractor shall be responsible for maintaining records of water removed from the isolated area for permit records or for claims for additional compensation. The Contractor shall measure dewatering to remove incidental leakage separately from pumped groundwater or other water disposed of in the course of construction activities.

G. The City reserves the right to advance or delay the start of shutdowns, without changing the duration of the shutdown, by 14 calendar days. The City will provide this notice at least 7 calendar days prior to the start of the shutdown. The Contractor's work plan shall address any impacts resulting from such action. The Contractor shall include, in its bid, all costs for one advancement or delay per each specified shutdown.

H. During shutdowns the Contractor shall provide temporary electrical power as necessary to perform the construction work.

I. In order to ensure the reliable supply or quality of public drinking water the City may terminate a shutdown that has been planned and/or commenced by the Contractor. If the City deems such termination to be necessary, then the termination may be ordered at the City's sole discretion. Upon written notification of such early termination by the City Representative, the Contractor shall immediately redirect work to restore the facilities that have been shut down in accordance with the Contractor's Contingency Plan (as required by Article 1.05). Contractor's restoration efforts shall commence within 4 hours of the termination notification, unless a longer period is specified in the notification. Remaining unfinished work will be completed during a subsequent

shutdown coordinated and scheduled by the City.

J. If a Contractor fills out a SOR form for a particular activity, an ARF is not required.

K. The Contractor's safety responsibilities are described in Section 01 35 45.

1.04 THE CITY'S REQUIREMENTS PRIOR TO SHUTDOWN

A. The requested pipeline or facility shutdown will be permitted only after the following conditions have been met:

1. All Contractor-furnished and/or City-furnished materials to be installed during the proposed shutdown are on-site or at a designated staging area, and all associated submittals have been approved by the City Representative at least three (3) working days prior to the shutdown.

2. All Contractor-provided or City-provided equipment to be used during the proposed shutdown work is on-site.

3. The City Operations Manager has approved a SOR prepared and submitted by the Contractor and a file copy is returned to the Contractor by the City Representative. This System Outage Request is normally accompanied by a SFPUC internally-generated form referred to as an Operational Change Request and a Lock-out Tag-out ("LOTO") plan prepared by the concerned Operating Division, signed by the Operations Manager, and reviewed by the Contractor.

4. The City reviews the LOTO plan including the arrangements by the construction contractor and confirms complete implementation of the LOTO plan via a visit to the field with representation from the Contractor together with the Operations Representative, to visually observe the presence of locked and tagged valves, switchgear, etc. The Contractor should be given ample time to review and question to their satisfaction, the system schematics involving all valves/switches to lock out.

5. The City has approved the following submittals from the Contractor:

a. NSF-60 certification for chemicals applied to drinking water components (usually disinfectants) and facilities and NSF-61 certification for new components which will come in contact with drinking water

b. Sanitary Work Practice Plan per Section 33 13 00

c. Contractor's detailed Drainage, Dechlorination, Monitoring and Discharge Plan per Article 1.03 of this Section and per Section 33 13 00

1.05 SYSTEM OUTAGE REQUESTS ("SOR")

A. The installation of valves, actuators, pipes, pumps, associated appurtenances, instruments, or water treatment equipment may require a shutdown.

B. A complete System Outage Request shall include:

1. A completed SOR form (Appendix A)

2. A detailed resource-loaded schedule showing the labor, material and equipment needed for shutdown activities. The schedule shall indicate work for all shifts and crafts. At the City's request, the Contractor shall provide a supplementary schedule that may be detailed down to daily or hourly activities to ensure proper planning and monitoring of the work. One SOR is required for each pipeline or facility shutdown.

3. The Shutdown portion of the Construction Schedule described under Section 01 32 16

4. Contractor's Contingency Plan to be implemented in the event that the City directs the Contractor to perform emergency restoration of the pipeline or system component which has been shut down. As described in Article 1.03, the City may terminate any shutdown that has been planned by the Contractor and approved by the City at any time, at its sole discretion, if necessary for the purposes of ensuring a reliable supply or quality of public drinking water.

5. Documentation of NSF-60 certification for chemicals applied to drinking water components (typically a disinfectant) and facilities and NSF-61 certification for new components which will come in contact with drinking water.

6. Contractor's Sanitary Work Practices Plan.

7. Contractor's Drainage, Dechlorination, Monitoring, and Discharge/Disposal Plan (Incidental Water Management Plan). For Contractor work inside a confined space or trench subject to potential inundation/engulfment, this plan shall describe how leakage will be removed, (e.g., bulkhead, sandbag berm and pumps, gravity feed from a blow off, etc.). The Contractor shall provide specific details regarding the number, sizes, and types of dewatering pumps used, the design of the sandbag berm or bulkhead, size of the blow-offs used for gravity discharge, etc. The Contractor shall attach drawings as necessary. This plan shall describe in detail how water levels will be monitored and discharged including the high water level that triggers evacuation in the event of a catastrophic valve failure or unmanageable leakages. Backup pumps shall be provided so that in the event of a pump failure the dewatering operation can continue. The Plan shall include calculations to demonstrate that the Contract-specified leakage (Article 1.09) can be handled safely without flooding the job site. The calculations shall consider available storage in the pipeline or elsewhere, pumping rate, hours per day pumped, and whether pumping over extended hours or weekend is required to handle the Contract-specified leakage.

8. A shutdown narrative section (Outage Work Plan) describing the Contractor's sequence of work; crew sizes and equipment; the length of time required to complete the Work; any necessary temporary power, controls, instrumentation or alarms required to maintain control and the labor and equipment that the Contractor proposes to complete the scheduled work.

9. A site plan for the shutdown work.

C. The SOR shall be signed and dated by the Contractor's Representative, and must be submitted to the City Representative not less than 60 calendar days prior to the requested shutdown.

D. The Contractor shall notify the City Representative in writing at least 7 days in advance

of the outage if the schedule or any part of the work has changed from the approved SOR. A revised SOR may be requested from the Contractor. No revised system outage is to be initiated without written approval from the City Representative or the revised SOR has written approval from the Operations Manager.

E. Not less than 2 working days prior to the approved shutdown date, the Contractor shall submit to the City Representative written confirmation of the Contractor's plan to proceed with the work on the shutdown start date approved in the SOR as well as the status of materials, equipment, tools, and personnel.

1.06 ACCESS REQUEST

Some construction activities do not fall into the shutdown category, but are Contractor testing activities, Contractor valve testing activities, hot taps, hot work, or work adjacent to a portion of the water system. These activities shall be tracked along with the shutdowns in order to keep the City Representative aware of construction work activity at their facilities, including the number of people and amount of equipment at their existing facility. The City Representative shall be updated on a frequent basis on the status of the hot work and Contractor's activities so that a clear understanding of potential hazards/risks to Operations and to construction can be identified and communicated swiftly and correctly among the parties involved in the hot work.
The work included is a part of a contract with the City and therefore Operations needs to know who, how many, and where Contractor's personnel will be on any given day and those areas/systems the Contractor will be working with or working on.
The information required shall be included in the Access Request Form (ARF in Appendix B); add pages with additional information for clarity as necessary. This form shall precede the Contractor's access request activity.
Contractor shall update the City Representative daily on the status of the access request activity. Operations will inform the Contractor through the City Representative of relevant changes to operations which affect the construction work.

A. The ARF shall be signed and dated by Contractor's Representative, and must be submitted to the City Representative not less than 30 calendar days prior to the requested access, hot tap, testing, or work adjacent to a portion of the water system.

B. The ARF shall include the Contractor's Hot Tap Plan, if applicable per Section 33 13 00.

C. The Contractor shall notify the City Representative in writing at least 7 days in advance of the access if the schedule or any part of the work has changed from the approved Access Request Form. No system access shall be initiated without written approval from the City Representative.

D. The Contractor's safety responsibilities are described in Section 01 35 45.

1.07 LIQUIDATED DAMAGES

Contractor will be assessed Liquidated Damages if Contractor fails to meet the dates specified in Contractor's approved System Outage Request or if Contractor fails to perform Contractor's Shutdown Work within the specified number of days. Liquidated Damages are specified in Article 1.03 of Section 00 73 02.

1.08 OPERATION OF LINE VALVES

A. City personnel will be responsible for operation of existing line valves, customer turnout valves, gates, pumps, vents and drains to isolate and drain the pipeline, section of pipeline or the component to be isolated for the system outage.

B. Contractor shall be responsible for handling and monitoring incidental leakage and residual water after the initial isolation and draining as described in Article 1.03.

C. Where City's facilities will continue to operate throughout the execution of the Contract, the Contract work shall be thoroughly planned prior to its commencement in order to minimize impact on the City's operations.

1.09 PROJECT-SPECIFIC REQUIREMENTS FOR SHUTDOWNS

A. Shutdown Name: DI/1 (non WSIP)

B. Type of Shutdown: Pipeline shutdown of SAPL2

C. Purpose of the Shutdown: Installation of pipe tee with gate valve, pipe encasement and manhole in Sloat Boulevard sidewalk fronting Stern Grove.

D. Facilities that will be impacted: SAPL2 in Sloat Blvd. from 22nd Ave. to West Portal Ave. and Junipero Serra Blvd.

E. System Constraints and/or other related shutdowns: N/A

F. Expected Leakage (gallons per minute): 500 gpm

G. Shutdown dates:

1. Out of service: 12/23/2020 and/or 12/23/2021

2. Turnover to the Contractor (start of Contractor's shutdown work): 1/1/2021 and/or 1/1/2022

3. Turnover to the City (end of Contractor's shutdown work): 2/1/2021 and/or 2/1/2022

4. Back in service: 2/14/2021 and/or 2/14/2022

H. The Contractor shall have personnel that need to make confined space entry behind a single butterfly valve and the Contractor shall be responsible for evaluating the downstream hazards in the construction work area and providing mitigation as indicated.

PART 2 – PRODUCTS

2.01 GENERAL

A. Contractor shall be responsible for furnishing chemicals for dechlorination and pH control of water if discharge of water occurs as a part of Contractor's work.

2.02 STORAGE AND HANDLING OF CHEMICALS

A. Chemicals shall be stored and handled in complete conformance with the manufacturer's Safety Data Sheet ("SDS").

PART 3 – EXECUTION

3.01 SEQUENCE OF CONSTRUCTION

A. The Contractor shall execute shutdown work in the following general order:

1. Contractor's work shall not commence work until the City Representative notifies Contractor that the Contractor's SOR is approved.

2. Demolition of the existing pipeline or facility shall not begin until the City has completed shutdown preparatory activities and Contractor has received notification from the City Representative.

3. Contractor's work shall not commence until the Contractor and the City Representative have completed Lock-out Tag-out ("LOTO") in accordance with SFPUC (see Article 1.04), Section 01 35 45, and Cal- OSHA regulations.

4. Contractor's work shall not commence until Contractor has received approval of the plumbing configuration for dechlorination and pH control and all required permits are in hand.

5. Contractor shall commence and complete work on each pipeline or component/facility within the time limits described in Section 00 73 02.

6. Contractor shall be responsible for maintaining the isolated section or component/facility in a safe and sanitary condition.

7. The Contractor shall notify the City Representative and then remove its locks upon completion of the Contractor's work and when the Contractor's personnel are clear.

8. The Contractor shall submit records of the shutdown including volume of water discharged, chlorine, and pH of the discharged water and total chemicals consumed.

B. The Contractor shall execute access request work in the following general order:

1. Contractor's work shall not commence until the City Representative notifies Contractor that the Contractor's Access Request is approved.

2. Contractor's hot tap work shall not commence until the City Representative notifies Contractor that the Contractor's Hot Tap Plan is approved.

3. Contractor's testing shall not commence until the City Representative notifies Contractor that the Contractor's testing plan has been approved.

4. Contractor's work shall not commence until the Contractor and the City Representative have completed LOTO in accordance with SFPUC (see Article 1.04), Section 01 35 45, and Cal/OSHA regulations.

5. Contractor's work shall not commence until Contractor has received approval of the plumbing configuration for dechlorination and pH control and all required permits are in hand.

6. Contractor shall be responsible for maintaining the isolated section or component/facility in a safe and sanitary condition.

7. The Contractor shall notify the City Representative and then remove its locks upon completion of the Contractor's work and when the Contractor's personnel are clear.

8. The Contractor shall submit records including volume of water discharged, chlorine, and pH of the discharged water and total chemicals consumed.