



System Maintenance Clearances for Gas Transmission Facilities

Procedure

TD-4441P-11, Rev. 0a
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Summary

This utility procedure provides instructions for preparing, writing, endorsing, approving, executing, and documenting system maintenance clearances on Pacific Gas and Electric Company (PG&E or Company) natural gas transmission facilities.

LEVEL OF USE: Informational Use



Target Audience

All personnel who perform work, or provide support for work, on PG&E natural gas transmission systems and associated equipment, including but not limited to:

- Gas control center (GCC) personnel (gas transmission control center [GTCC] and gas distribution control center [GDCC])
- Maintenance and construction (M&C) personnel
- Gas pipeline operations and maintenance (GPO&M) personnel
- General construction (GC) personnel
- Pipeline field services personnel
- Gas system planning personnel
- Gas transmission engineering and design (GTE&D) personnel
- Facility integrity management program (FIMP) and technical services personnel
- Project management and major programs personnel



Safety

Follow safe work practices and use PG&E-approved personal protective equipment (PPE).

Death, personal injury, or equipment or property damage can result from unsafe system operation and can occur from improper preparation or execution of the clearance.

Potential hazards associated with executing system maintenance clearances on gas transmission facilities include, but are not necessarily limited to, the following conditions and situations:

- Explosion or ignition of escaping gas
- Traffic hazards when working on facilities near vehicles or roadways
- Hazards associated with working in confined spaces



Before You Start

- Receive appropriate training as indicated in [Utility Standard TD-4441S, “Gas Clearances.”](#)



Operator Qualification (OQ) Requirements

There is no specific OQ for performing the steps in this procedure. However, tasks performed in executing a clearance may require OQs (e.g., turning valves or calibrating equipment).



Quality Control (QC) and Quality Assurance (QA)

QC verification points are used during field observations by the supervisor in the various lines of business that perform this work, and during QA assessments to evaluate conformance during annual randomized schedule which complies with state and federal regulations.



Tools and Equipment

Tools and equipment required to perform work in this procedure include, but are not necessarily limited to, the following:

- SAP work clearance management (WCM) software
- Tools as required for executing clearance work.



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Section A. Planning and Writing

This section provides instructions for planning and writing a gas transmission system maintenance clearance. The instructions in this section begin when the first-line supervisor for the group performing the work determines whether a system maintenance clearance is required and end when the clearance writer is ready to submit the clearance template application for endorsement and approval (if an approved template does not already exist).

Clearances that affect electrical systems, valve controller systems, programmable logic controller (PLC) systems, or uninterruptible power supply (UPS) systems must undergo a risk assessment to mitigate any unintended impacts. All risk assessments must take into account the safety of the public and personnel as well as customer and operational requirements.



NOTE!

Throughout this procedure, “work clearance document (WCD)” refers to the electronic document for the clearance that is created and maintained in SAP, and “Gas Clearance Document” refers to the hard copy printout from the WCD that is used by personnel in the field.

A1

Determining Clearance Necessity

1. The first-line supervisor determines whether a system maintenance clearance is required.
 - A. Maintenance work on gas transmission systems that meets **any** of the following criteria requires a system maintenance clearance:
 - The first-line supervisor for the group performing the work determines that a clearance is needed.
 - The gas transmission control center (GTCC) management determines that a clearance is needed.
 - The work affects gas pressure, flow, or quality.
 - The work involves activation or deactivation of facilities.
 - The work affects remote monitoring and control.
 - The work may impact ability to maintain service to customers.
 - B. Work that requires a system maintenance clearance includes, but is not necessarily limited to, the following examples:
 - Annual maintenance to a regulator valve that must be isolated by opening or closing valves to clear the equipment before it can be operated
 - Greasing and stroking a valve. (Stroking a valve is operating the valve from full open to full closed, or from full closed to full open.)
 - Operating any MAOP/BTU separation valve for routine maintenance
 - Internal regulator inspections (all internal inspections on regulators must have a clearance)
 - Maintenance that requires taking a regulator out of service
 - C. [Utility Procedure TD-4441P-15, "Non-Clearance Routine \(NCR\) Transmission Work,"](#) identifies work that does not require a clearance.

Section A1 (continued)

2. The clearance supervisor determines whether an approved template exists for the maintenance work being performed.
 - A. If an approved template **does** already exist, the clearance supervisor creates a maintenance WCD (as described in [Job Aid TD-4441P-11-JA01, "Creating a Maintenance WCD from an Approved Template"](#)) and skips to [Section B3](#).
 - B. If an approved template **does NOT** already exist, the first-line supervisor assigns a clearance writer, and the clearance writer performs the following steps:
 - 1) Prepare an Application for Clearance Template as described in Section A2.
 - 2) Submit the new template for endorsement and approval as described in [Section B1](#) and [Section B2](#).
 - 3) After the template is approved, create a maintenance WCD (as described in [TD-4441P-11-JA01](#)) and proceed to [Section B3](#).

A2

Preparing a Clearance Template Application

The clearance writer performs the steps in this section.

1. Fill out all portions of the clearance template application completely, per the instructions in [Utility Procedure TD-4441P-10, Attachment 2, "Application for Gas Transmission System New Clearance Instructions."](#)
 - A. Identify tags to be placed in the Sequence of Operations according to the instructions in [Utility Procedure TD-4441P-20, "Hazardous Energy Control \(Lockout/Tagout\) for Gas Clearances."](#)
 - B. If blowing down of gas is required, use [Utility Procedure TD-4441P-01, Attachment 5, "Natural Gas Release Notification Requirements,"](#) and [Form TD-4441P-01-F02, "Natural Gas Release Notification,"](#) as needed.
 - C. All fields in the WCD are required. If a field is not used, enter "NA" (not applicable).
 - D. **OPTIONAL:** A preliminary or draft clearance, which is not necessarily a complete package, may be sent to endorsers and approver for input toward a final clearance package.

Section B. Endorsement and Approval

This section provides instructions for endorsing and approving a gas transmission system maintenance clearance. The instructions in this section begin when the clearance writer is ready to submit the clearance template application for endorsement and approval (if an approved template does not already exist) and end when the clearance supervisor records preliminary authorization to proceed with the clearance.

B1

Submitting a Clearance Template Application for Endorsement and Approval

1. The clearance writer attaches the following to the WCD:
 - Any visual representations needed (e.g., operating maps, drawings, electrical diagrams, piping and instrumentation diagrams, etc.). Visual representations attached to the WCD must be current and accurate because they are used for reviewing the WCD.
 - Testing procedure (if applicable)
2. The clearance writer routes the WCD and all attached documents for endorsement/approval per Table 1, "Clearance Template Application Endorsers."
 - A. If clearance includes tapping and/or welding operations, notify Transmission Planning (if Transmission Planning is not an endorser).
 - B. If clearance impacts pipeline assets, notify Pipeline Services (if Pipeline Services is not an endorser).

Table 1. Clearance Template Application Endorsers

DEPARTMENT	REQUIRED TO ENDORSE WHEN WORK AFFECTS
Gas Distribution Control Center (GDCC)	<ul style="list-style-type: none"> • Gas distribution (GD) flow, pressure, gas quality or the ability to monitor or remotely operate equipment • When district regulator is backfed. • Any activation or deactivation of GD facilities • Downrates from transmission to distribution
Transmission Planning	<ul style="list-style-type: none"> • Gas transmission (GT) system pressure or flow • GT system capacity • GT customers • Gas quality • Abnormal system routing • Storage capacity • Gas production • Interconnect facilities
Distribution Planning	<ul style="list-style-type: none"> • GD system hydraulics • GD system capacity • GD customers • GD gas quality • GD abnormal system routing
Gas Plant Engineering and Design	<ul style="list-style-type: none"> • Any pipeline or station clearance where gas plant engineering and design is the responsible project engineer.
Pipeline Services	<ul style="list-style-type: none"> • Any pipeline clearance where gas plant engineering and design is not the responsible project engineer.
Station Services	<ul style="list-style-type: none"> • Station assets where gas plant engineering and design is not the responsible project engineer.
Electrical Engineering	<ul style="list-style-type: none"> • Electrical isolation of three phase live circuits • Installation or use of temporary power

Section B1 (continued)

Table 1. Clearance Template Application Endorsers (continued)

DEPARTMENT	REQUIRED TO ENDORSE WHEN WORK AFFECTS
Controls Engineer	<ul style="list-style-type: none"> • RTU, PLC work (adding, manipulating, removing) • Installation, development, design, and modification of automated controls • Deactivation of automated controls • Functional check out
Local first-line supervisor	<ul style="list-style-type: none"> • Must review and endorse ALL clearances
Secondary Local Endorser	<ul style="list-style-type: none"> • Must review and endorse ALL clearances

B2**Reviewing the Clearance Template Application**

- Each identified endorser (per [Table 1](#)), reviews the clearance template application as described in Table 2, “Endorsement Responsibilities,” and endorses or rejects the clearance template in SAP no more than 5 business days after receiving the endorsement request.
 - After all endorsers endorse the clearance template, SAP automatically notifies the GTCC via email.

Table 2. Endorsement Responsibilities

DEPARTMENT	RESPONSIBLE FOR REVIEWING	SECTIONS REQUIRED TO REVIEW
GDCC	<ul style="list-style-type: none"> • GD system impacts to pressure, flow, and gas quality • GD customer impacts • GD SCADA and remote capability impacts 	Entire WCD
Transmission Planning	<ul style="list-style-type: none"> • GT system impacts to pressure, flow, and gas quality • GT customer impacts • GT SCADA changes • GT gauge locations and pressures • GT drafting strategies • GT system operation and configuration • GT minimum pressure requirements • Blowdown calculations 	<ul style="list-style-type: none"> • Header Section • Special Instructions • Gauge information • SCADA information • Sequence Of Operations
Distribution Planning	<ul style="list-style-type: none"> • GD system impacts to pressure, flow, and gas quality • GD customer impacts • GD SCADA changes • GD gauge locations and pressures • GD drafting strategies • GD system routing • GD minimum pressure requirements 	<ul style="list-style-type: none"> • Header Section • Special Instructions • Gauge information • SCADA information • Sequence Of Operations

Section B2 (continued)

Table 2. Endorsement Responsibilities (continued)

DEPARTMENT	RESPONSIBLE FOR REVIEWING	SECTIONS REQUIRED TO REVIEW
Gas Plant Engineering and Design (pipeline clearance)	If endorser is not the pipeline services asset owner, consult with the asset owner when reviewing the following: <ul style="list-style-type: none"> • Pipeline MOP on affected lines • Conditional/Temporary reduced operating pressure (CROP/TROP) on affected lines • Proper purge and pack procedure • Maximum welding pressures • Maximum tapping pressures • Maximum plugging pressures • Impacts to power gas 	<ul style="list-style-type: none"> • Header Section • Reference Drawings • Special Instructions • Gauge information • Sequence of Operations (if required to review pack and purge procedure)
Pipeline Services		
Gas Plant Engineering and Design (station clearance)	If endorser is not the station services asset owner, consult with the asset owner when reviewing the following: <ul style="list-style-type: none"> • Current MOP/MAOP inside station • Safe and proper functionality of station equipment • Safe and proper isolation of station equipment • Contingency plans that include operating station equipment • Impacts to power gas 	<ul style="list-style-type: none"> • Header Section • Reference Drawings • Special Instructions • Sequence of Operations
Station Services		
Electrical Engineering	<ul style="list-style-type: none"> • Safe and proper operation of electrical equipment • Safe and proper isolation of electrical equipment • Contingency plans that include operating electrical equipment • Contingency plans that include operating temporary power 	<ul style="list-style-type: none"> • Header Section • Reference Drawings • Special Instructions • Sequence Of Operations
Controls Engineer	<ul style="list-style-type: none"> • Safe and proper operation of automated equipment • Safe and proper isolation of automated equipment • Contingency plans that include operating automated equipment 	<ul style="list-style-type: none"> • Header Section • Reference Drawings • Special Instructions • Sequence of Operations
Local first-line supervisor	<ul style="list-style-type: none"> • Safe operation and isolation of clearance • Logistics • Clearance completeness • Feasibility • Hazardous energy control (lockout/tagout) • Impacts to power gas 	Entire WCD
Secondary Local Endorser	<ul style="list-style-type: none"> • Safe operation and isolation of clearance • Logistics • Clearance completeness • Feasibility • Hazardous energy control (lockout/tagout) • Impacts to power gas 	Entire WCD

Section B2 (continued)

2. If an endorser rejects the clearance template, perform the following steps:
 - A. The endorser enters the reason for rejecting when prompted.
 - SAP automatically notifies the clearance writer of the rejection via email.
 - B. The clearance writer reviews the rejection comments, modifies the clearance template as needed, and reroutes the WCD for endorsement/approval.
3. GTCC reviews the clearance template application and must approve or reject the clearance template in SAP no more than 5 business days after the WCD is fully endorsed.
4. If GTCC rejects the clearance template, perform the following steps:
 - A. GTCC enters the reason for rejecting when prompted.
 - SAP automatically notifies the clearance writer of the rejection via email.
 - B. The clearance writer reviews the rejection comments and modifies the clearance template as needed.
 - C. If the reason GTCC rejects the clearance template is an unsafe Sequence of Operations as written and endorsed, perform the following steps:
 - 1) GTCC reviews the issues found with the first-line supervisor and local superintendent.
 - 2) GPO&M personnel ensure the clearance template is revised and verified as correct.
 - D. The clearance writer reroutes the WCD for endorsement/approval.

B3**Obtaining Preliminary Authorization**

1. The clearance supervisor performs the following tasks:
 - A. Review the clearance to gain complete knowledge of the intended work and clearance.
 - B. Make notifications of the work being done per the Gas Clearance Document (i.e., call indicated parties in the specified time frames). GTCC personnel only notify the proper authorities if the clearance supervisor does not have the ability to do so.
2. If **none** of the following is true of the system maintenance clearance, preliminary authorization is not required (skip the rest of Section B3):
 - Affects local transmission flow or pressure
 - Affects backbone flow or pressure
 - Affects availability or capacity at a compressor station
 - Affects delivery to an interconnect
 - Affects storage injection or withdrawal capabilities
 - Requires shut-in of California production

Section B3 (continued)

3. The clearance supervisor calls GTCC personnel to request preliminary authorization approximately 48 hours before the start of clearance work and provides the following information to ensure document alignment:
 - WCD number
 - Revision number (of WCD)
 - Clearance supervisor's name, LAN ID, and mobile phone number
4. The gas transmission system operator on shift requests preliminary authorization from the transmission coordinator on shift.
5. If preliminary authorization is granted, perform the following steps:
 - A. The transmission gas system operator on shift performs the following steps:
 - 1) Relay preliminary authorization approval to the clearance supervisor.
 - 2) Enter date and time in the WCD **AND** write date and time on the control room copy of the Gas Clearance Document.
 - B. The clearance supervisor notes date and time on the Gas Clearance Document.
 - C. If more than 96 hours pass after preliminary authorization is granted without final authorization being granted, the preliminary authorization expires (repeat the steps in [Section B3](#)).
6. If preliminary authorization is **NOT** granted, perform the following steps:
 - A. The transmission gas system operator on shift performs the following steps:
 - 1) Relay rejection to the clearance supervisor.
 - 2) Cancel the clearance in the WCD.
 - B. The clearance supervisor determines a new date to perform the work and creates a maintenance WCD for that date (as described in [Job Aid TD-4441P-11-JA01, "Creating a Maintenance WCD from an Approved Template"](#)).
7. If it is determined after preliminary authorization (but before final authorization) that the work will not be performed, the clearance supervisor calls GTCC to cancel the WCD.

Section C. Preparing, Performing, and Completing Clearance Work

This section provides instructions for executing a gas transmission system maintenance clearance. The instructions in this section begin when the clearance supervisor has preliminary authorization to proceed with the clearance and end when the clearance is complete.

Throughout executing a system maintenance clearance, perform the following steps whenever applicable:

1. **BEFORE** performing each communication step shown on the Gas Clearance Document (indicated with an asterisk [*]), the clearance supervisor calls the GTCC to receive permission to perform that operation.
2. Personnel not trained as qualified clearance holders must work under the direct supervision of a qualified clearance holder when performing clearance work.
3. When hand-throttling valves for pressure control, monitor pressure with primary and backup gauges as described in [Job Aid TD-4441P-01-JA01, "Gauging Pressure While Hand-Throttling Valves."](#)

C1

Preparing to Perform Clearance Work

The clearance supervisor performs the steps in this section.

1. Print and distribute copies of the following to all personnel performing work under the clearance:
 - The approved Gas Clearance Document
 - Any visual representations needed (e.g., sketches, operating maps, drawings, electrical diagrams, piping and instrumentation diagrams, etc.)
1. Conduct a clearance tailboard with all field personnel performing work under the clearance. (See the [Safety and Performance Fundamentals Handbook](#) for guidance on safety topics to discuss in addition to the specific work for the clearance.)
2. Keep contact information for all personnel working under the clearance (e.g., names, LAN IDs, mobile phone numbers, etc.), and distribute this information as necessary.

C2

Obtaining Final Authorization

1. On the day clearance work begins, the clearance supervisor calls GTCC personnel to request final authorization and provides the following information to ensure document alignment:
 - WCD number
 - Revision number (of WCD)
 - Clearance supervisor's name, LAN ID, and mobile phone number
2. The gas transmission system operator on shift requests final authorization from the senior transmission coordinator on shift.

Section C2 (continued)

3. If final authorization is granted, perform the following steps:
 - A. The transmission gas system operator on shift relays final authorization approval to the clearance supervisor.
 - B. The transmission gas system operator on shift enters date and time in the WCD **AND** writes date and time on the control room copy of the Gas Clearance Document.
 - C. The clearance supervisor notes date and time on the field copy of the Gas Clearance Document.
4. If final authorization is **NOT** granted, perform the following steps:
 - A. The transmission gas system operator on shift performs the following steps:
 - 1) Relay rejection to the clearance supervisor.
 - 2) Cancel the clearance in the WCD.
 - B. The clearance supervisor determines a new date to perform the work and creates a maintenance WCD for that date (as described in [Job Aid TD-4441P-11-JA01, "Creating a Maintenance WCD from an Approved Template"](#)).
5. **OPTIONAL:** If there are no steps in the Sequence of Operations between calling for final authorization and "Reporting On" (e.g., SCADA maintenance), the clearance supervisor may "Report On" at the same time as receiving final authorization (skip to Section C4).

C3

Performing Sequence of Operations Tagging List



WARNING!

INJURY or DEATH to persons, or DAMAGE to property, can result from performing work on equipment that is not properly cleared and tagged.

1. The clearance supervisor ensures clearance work is performed in accordance with the following:
 - The Sequence of Operations Tagging List and Special Instructions on the Gas Clearance Document
 - The instructions provided in [Utility Procedure TD-4441P-20, "Hazardous Energy Control \(Lockout/Tagout\) for Gas Clearances"](#)

C4

“Reporting On”

1. The clearance supervisor verifies it is safe to perform work.
2. Before performing work, “Report On” according to the following instructions:
 - A. The clearance supervisor “Reports On” to GTCC personnel.
 - B. GTCC personnel record the “Report On” information in the WCD.
 - C. If the clearance is for work at a major station, the clearance supervisor updates the Clearance Communications Board to reflect the personnel “Reported On.”
3. If the clearance is for work at a manned station, there must be at least one additional authorized person (other than the clearance supervisor) signed on to the clearance.

C5

Transferring Clearance Supervisor Authority

If the clearance supervisor needs to change at any time during the clearance work (e.g., due to injury, illness, or other unavailability), the instructions in this section apply.

1. The outgoing clearance supervisor performs the tasks below. (If the outgoing clearance supervisor is unable to perform these tasks, the local superintendent designates appropriate personnel to perform the tasks.)
 - A. Safely stop clearance work in progress (and other work if necessary).
 - B. Inform GTCC of the change.
 - C. Transfer the responsibilities for supervising the clearance to another clearance supervisor who is thoroughly knowledgeable about the clearance in progress.
2. Upon assuming responsibility for the clearance, the incoming clearance supervisor performs the following tasks:
 - A. Communicate the transfer of clearance responsibility through a tailboard with all personnel working on the clearance.
 - B. Verify that all isolation points, tags, and locks are in compliance with the Sequence of Operations tagging list and [TD-4441P-20](#).
 - C. Resume clearance work (and other work if previously stopped).
3. The transmission gas system operator on shift performs the following tasks:
 - A. Confirm the following with the new clearance supervisor:
 - Clearance number
 - Approval date on Gas Clearance Document
 - Clearance supervisor’s contact information (name, LAN ID, etc.)
 - The next step being performed
 - B. Update the clearance supervisor information in the heading of the clearance.
 - C. Record the change of clearance supervisor (and the reason for the change) in SAP long text.

C6 Performing Clearance Work



WARNING!

DEATH or INJURY to persons, or DAMAGE to property, can result from operating an isolation point with a Man-on-Line (MOL) tag attached.

1. If at any time anyone working on the clearance believes that equipment being worked on is not properly cleared or that changes to the clearance are required, see Section C7.
2. Upon completion of the clearance work, the clearance supervisor ensures that all equipment involved in the clearance work has been tested and is operating properly before transferring the equipment to operations. (See [Job Aid TD-4441P-10-JA01, "Testing Cleared Equipment to be Operational."](#) for additional information on conducting the tests.)

C7 Revising an Active Clearance



NOTE!

Major and minor revisions are defined in the [Definitions](#) section of this utility procedure.

1. "Major revisions" to an approved clearance must be rerouted through the approval process in SAP.
2. "Minor revisions" need approval only from the senior transmission coordinator on shift.

Examples of "minor revisions" include:

- Addition/Change of SCADA alarm changes
 - Resequencing steps in the Sequence of Operations as needed as long as it is deemed safe to proceed
 - Additional isolation point for block and bleed purposes
 - Change in gauging pressures
3. If changes are required to an approved system maintenance clearance in progress, and it is considered a **major** revision, the following steps must be taken:
 - A. Personnel working on the clearance must immediately stop any work in progress.
 - B. Clearance supervisor contacts GTCC and notifies them of pending revision.
 - C. The clearance supervisor or delegate submits the revised WCD in SAP. The revision comment section must state the impact of revision and who needs to re-endorse (per [Table 1](#)).
 - D. Identified endorsers and GTCC personnel review and endorse/approve (or reject) the changes as described in [Section B2](#):
 - E. GTCC reissues the revised Gas Clearance Document via email to the clearance supervisor and all endorsers, stating revision number and reason for change.

Section C7.3 (continued)

- F. Before resuming work, the clearance supervisor performs the following steps:
 - 1) Redistribute the revised Gas Clearance Document to all affected personnel.
 - 2) Conduct a clearance revision tailboard with all field personnel performing work under the clearance to discuss the approved major revision and revised Gas Clearance Document.
 - G. Clearance supervisor or delegate updates the template and re-submits the template for endorsement/approval.
4. If changes are required to an approved system maintenance clearance in progress, and it is considered a **minor** revision, the following steps are taken:
- A. Personnel working on the clearance immediately stop any work in progress.
 - B. The clearance supervisor contacts the gas transmission clearance coordinator (or the senior gas transmission coordinator if the gas transmission clearance coordinator is not available) and requests a minor revision.
 - 1) Clearance supervisor reviews the requested changes with the GTCC and identifies the steps on the Gas Clearance Document.
 - 2) If clearance supervisor and senior gas transmission coordinator do not agree on minor revision, revision request is escalated to the area superintendent and the gas transmission clearance coordinator on call.
 - C. GTCC personnel perform the following tasks:
 - 1) Review the changes on the Gas Clearance Document with the clearance supervisor.
 - 2) Relay verbal approval to the clearance supervisor.
 - 3) Redline the changes on the control room Gas Clearance Document.
 - 4) Create an entry into the long text of WCD in SAP noting the revision number, date, and time of the minor revision.
 - 5) Change status of WCD template to development (DEVP).
 - D. Before resuming work, the clearance supervisor conducts clearance revision tailboard with all field personnel performing work under the clearance to discuss the approved minor revision and hard copy redlined changes.
 - E. Clearance supervisor or delegate updates the template and re-submits the template for endorsement/approval.

C8

“Reporting Off”

1. When the clearance work is complete, “Report Off” according to the following instructions:
 - A. The clearance supervisor verifies that the work is complete, equipment is ready to return to service, and all personnel are safe and clear.
 - B. The clearance supervisor “Reports Off” to GTCC personnel.
 - C. GTCC personnel record the “Report Off” information in the WCD.
2. **OPTIONAL:** If there are no steps in the Sequence of Operations between calling to “Report Off” and “Clearance Complete” (e.g., SCADA maintenance), the clearance supervisor may report “Clearance complete” at the same time as “Reporting Off” (skip to [Section C10](#)).

C9

Performing Sequence of Operations Untagging List

1. The clearance supervisor ensures equipment is returned to operation in accordance with the following:
 - The Sequence of Operations Untagging List and Special Instructions on the Gas Clearance Document
 - The instructions provided in [Utility Procedure TD-4441P-20, "Hazardous Energy Control \(Lockout/Tagout\) for Gas Clearances"](#)

C10

Performing Clearance Complete Activities

1. The clearance supervisor notifies GTCC personnel that the clearance is complete.
2. GTCC personnel verify Sequence of Operations is complete and equipment is returned to operation.
3. GTCC personnel update the clearance status on the master clearance board in SAP.
4. If the clearance work is at a major station, the clearance supervisor removes the master clearance point MOL tag from the Clearance Communications Board

Section D. Recordkeeping

This section provides instructions for keeping records related to a gas transmission system maintenance clearance.

1. The clearance supervisor or delegate scans and uploads the following documents into the WCD no more than 5 business days after completing the clearance:
 - Completed, signed Gas Clearance Document
 - Redlined clearance sketch
 - Clearance roster (see [TD-4441P-20](#) for details)
2. GTCC personnel perform the following tasks in order to close the WCD:
 - A. Verify control room copy of the Gas Clearance Document is completed.
 - B. Scan the control room copy of the Gas Clearance Document and upload it to the WCD.
 - C. Check the WCD to ensure that the items listed in step D.1 above are attached.
 - D. Set WCD to “Closed” in SAP.
3. Retain records per the Record Retention Schedule.

END OF PROCEDURE



Definitions

Active Clearance: A clearance is considered active from the time the clearance supervisor requests final authorization until the clearance supervisor reports the clearance complete to gas control personnel.

Approver: The singular accountable party that consents to the proposed work clearance.

Authorized Personnel: Qualified personnel who execute gas clearances (i.e., personnel isolating energy by operating valves, squeezers, etc.) or who sign on with the clearance supervisor in order to perform work on the cleared equipment. See also the [Cal/OSHA definition of "Authorized employee or person."](#)

Clearance: Permission from gas control to perform work on a system, which may include operational changes or isolating energy sources.

Clearance Communications Board: A board for tracking clearances when the established and designated master clearance point for cleared equipment is in a major station. The board is located in the major station and displays a log for each ongoing clearance at the station.

Clearance Complete: When the system is returned to normal and notification is made to GTCC personnel.

Clearance Point: Any point in the clearance that (if operated) can affect the system and gets tagged with a Man-on-Line or Caution tag.

Clearance Supervisor: The employee who is responsible for and manages the clearance.

Clearance Writer: The person who enters relevant data for the execution of the clearance into the WCD.

Communication Step: A step in the clearance (identified by an asterisk [*] on the Gas Clearance Document and a check mark in the WCD) that requires a call to Gas Control personnel (e.g., preliminary authorization, final authorization, report on, beginning of work day, end of work day to report daily progress, report off, clearance work complete).

Endorser: The person (or persons) who review, provide feedback, support, and concur with the proposed work clearance.

Gas Clearance Document: The hard copy output of the WCD, which lists the Sequence of Operations and other instructions associated with the clearance.

Gas Quality: Gas characteristics such as heating value, moisture content, odorant levels, temperature, etc.

Gas Transmission Control Center (GTCC): The control center that monitors and manages gas flow on transmission facilities, and includes the following personnel: manager, supervisor, clearance coordinator, senior clearance coordinator, operator, senior transmission coordinators, and transmission coordinator.

Isolation Point: A clearance point that separates a source of energy from the work.



Definitions (continued)

Major Revisions: Changes to a clearance that affect the system hydraulics of a clearance, add more than three additional isolation points in a valve location, significantly increase the volume of blowdown gas, or cross over District/Division boundary lines.

Major Stations: PG&E backbone compressor stations (Tionesta, Burney, Gerber, Delevan, Bethany, Kettleman, Hinkley, and Topock); storage facilities (McDonald Island, Los Medanos, and Pleasant Creek); and Brentwood, Milpitas, Irvington, and Antioch terminals.

Minor Revisions: Changes to a clearance that **DO NOT** affect the system hydraulics of the clearance, add more than three additional isolation points in a valve location, significantly increase the volume of blowdown gas, or cross over District/Division boundary lines.

Non-Clearance Routine (NCR) Work: Work that is safe to perform without a formal clearance and meets the qualifying criteria listed in [TD-4441P-15](#).

Qualified Clearance Holder: Any personnel who is qualified to perform the clearance procedure and, in his or her supervisor's judgment, who has experience with the equipment to clear. The person must have knowledge of clearance points and the ability to ensure that the equipment is cleared safely.

Reporting Off: Required notification to gas control personnel (and the operator on shift for manned stations) and, if applicable, notification in the clearance log, indicating that work is complete on cleared equipment. Equipment may not be made available until all personnel "Reported On" have "Reported Off."

Reporting On: Required notification to gas control personnel (and the operator on shift for manned stations) and, if applicable, notification in the clearance log, indicating that cleared equipment is properly tagged, checked, and safe to work on and that the clearance holder is ready to begin work.

Secondary Local Endorser: The lead gas control technician, lead transmission mechanic, or other qualified clearance holder from the local headquarters.

Work Clearance Document (WCD): An electronic document in SAP associated with a specific Gas Clearance Document.



Implementation Responsibilities

GCC sent an email communicating upcoming clearance changes to all personnel who previously completed GAS-0401 ILT, "Gas Clearance Process Training," GAS-0837 ILT, "TD-4441P-01: Writing/Endorsing/Approving," or GAS-0838 ILT, "TD-4441P-01: Executing." This email contained a tailboard that informed users of WCD changes coming in the September 21, 2015 SAP release in preparation for lockout/tagout (LOTO) and clearance alignment, and that further training would come during system wide roll-out of the new procedures.



Implementation Responsibilities (continued)

PG&E Academy is creating interim training for the roll-out of LOTO and changes to the clearance process. Specific training is required for each role in the clearance and LOTO process. Personnel that already (prior to this publication) have roles in the process are required to complete the interim training course dedicated to only the changes in the process. This interim training will be conducted by the Academy from procedure publication through the procedure effective date (March 1, 2016) to ensure personnel understand the changes in their role prior to the effective date.

Academy is also creating a new curriculum based on the revised procedures. In early 2016 the long term training curriculum will be complete. New personnel impacted by the LOTO and clearance processes will be required to complete the new training courses. Until this new training curriculum is complete, new personnel will be required to complete the existing training and the interim training.

Codes and Standards will update [TD-4441S](#) with the new training course numbers and titles in early 2016.

Clearance writers will have opportunities to attend WebEx learning sessions provided by the GCC to receive further communication on how the clearance writing process is changing to include LOTO.

A Gas TDM Comms email will be sent out after the last of the TD-4441 series publishes to communicate that they are now all available in the Technical Information Library (TIL). Additional messaging will occur company-wide to drive awareness of gas LOTO and clearance alignment.



Governing Document

[Utility Standard TD-4441S, "Gas Clearances"](#)



Compliance Requirement / Regulatory Commitment

[California Code of Regulations \(CCR\) Title 8, Subchapter 7, General Industry Safety Orders, Section \(§\) 3314, "The Control of Hazardous Energy for the Cleaning, Repairing, Servicing, Setting-Up, and Adjusting Operations of Prime Movers, Machinery and Equipment, Including Lockout/Tagout"](#)

[Code of Federal Regulations \(CFR\) Title 49, Transportation, Part 192—Transportation of Natural and other Gas by Pipeline: Minimum Federal Safety Standards, §192.605, "Procedural manual for operations, maintenance, and emergencies"](#)

[CFR Title 49, Transportation, Part 192—Transportation of Natural and other Gas by Pipeline: Minimum Federal Safety Standards, §192.631 "Control room management"](#)



Supplemental References

- [Form TD-4441P-01-F02, "Natural Gas Release Notification"](#)
- [Job Aid TD-4441P-01-JA01, "Gauging Pressure While Hand-Throttling Valves"](#)
- [Job Aid TD-4441P-10-JA01, "Testing Cleared Equipment to Be Operational"](#)
- [Safety and Performance Fundamentals Handbook](#)
- [Utility Procedure TD-4441P-01, Attachment 5, "Natural Gas Release Notification Requirements"](#)
- [Utility Procedure TD-4441P-10, Attachment 2, "Application for Gas Transmission System New Clearance Instructions."](#)
- [Utility Procedure TD-4441P-15, "Non-Clearance Routine \(NCR\) Transmission Work"](#)
- [Utility Procedure TD-4441P-20, "Hazardous Energy Control \(Lockout/Tagout\) for Gas Clearances"](#)



Attachments

Attachments 1–6 each repeat the instructions from this procedure that apply to a particular clearance job role. These quick reference cards serve as convenient references only, and are not substitutes for fully understanding this procedure.

- [Attachment 1, "Transmission Clearance Coordinator Quick Reference Card for Gas Transmission System Maintenance Clearances"](#)
- [Attachment 2, "Senior Transmission Coordinator Quick Reference Card for Gas Transmission System Maintenance Clearances"](#)
- [Attachment 3, "Gas Transmission System Operator Quick Reference Card for Gas Transmission System Maintenance Clearances"](#)
- [Attachment 4, "Clearance Supervisor Quick Reference Card for Gas Transmission System Maintenance Clearances"](#)
- [Attachment 5, "Endorser and Approver Quick Reference Card for Gas Transmission System Maintenance Clearances"](#)
- [Attachment 6, "Clearance Writer Quick Reference Card for Gas Transmission System Maintenance Clearances"](#)
- [Job Aid TD-4441P-11-JA01, "Creating a Maintenance WCD from an Approved Template"](#)



Document Feedback

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Revision Notes

This is a new utility procedure that (along with TD-4441P-10, “System New Clearances for Gas Transmission Facilities” and TD-4441P-15, “Non-Clearance Routine (NCR) Transmission Work”) supersedes Utility Procedure TD-4100P-10, “Gas Clearance Procedures for Facilities Operating Over 60 psig,” Rev. 2, issued 03/26/2014.

This procedure contains information from TD-4100P-10 specific to system maintenance clearances (formerly known as “System Standard” and “Non-System Standard” clearances). Major revisions from TD-4100P-10 include the following:

Revision 0a:

- Table 2: Added “Impacts to power gas” to the “Responsible for Reviewing” lists for Pipeline Services, Station Services, Local First-Line Supervisor, and Secondary Local Endorser.
- Attachment 5: Replicated the Table 2 changes to Table 2 of the attachment.

Revision 0: (Publication Date: 11/04/2015; Effective Date: 03/01/2016)

- Incorporated Utility Bulletin TD-4100P-B007, “Secondary Local Approval and Unsafe Sequence of Operations Approved at the Local Level for Gas Transmission Clearance Procedures”
- Added references to Utility Procedure TD-4441P-20, “Hazardous Energy Control (Lockout/Tagout) for Gas Clearances,” where appropriate
- Changed references from “clearance application” or “Application for Gas Clearance” (or the like) to “Work Clearance Document (WCD), and changed references from “hard copy of the Application for Gas Clearance” (or the like) to “Gas Clearance Document”
- Removed references to facilities operating above/below 60 psig as a dividing line between transmission and distribution
- Added quick reference cards for clearance job roles (Attachment 1 through Attachment 6) as a convenient reference. Each of these attachments repeats the instructions from the procedure that apply to that attachment’s job role.
- Replaced “approvers” with “endorsers” throughout the procedure (GTCC is the only “approver”).
- Added process for revising an active clearance.
- Changed “10 business days” time frame to allot 5 business days for endorsers to endorse, and 5 business days for GTCC to approve
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