TRITON
MANUFACTURING

SF5.5
Safe Fill Station

Owner / Operator Manual

GENERON
16250 Tomball Parkway
Houston, Texas 77086

Phone: 713-937-5200
Fax: 713-937-5250
www.generon.com

ALL SYSTEMS MADE IN USA

Version 1.0

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TRITON MANUFACTURING

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General Safety Warnings

PLEASE READ MANUAL CAREFULLY AND FOLLOW ALL PROCEDURES BEFORE INSTALLING, OPERATING OR REPAIRING THE UNIT.

WARNING

Pressurized gases are contained within the fill station cabinet. High pressure gases are dangerous and may cause injury or death if handled or used inappropriately. Never point the high pressure gas outlet towards anyone.

The SFS2 safe fill stations are designed and have been tested to offer operator/bystander protection against the explosive force and resulting fragmentation should a cylinder fail during the filling operation.

WARNING

If a cylinder fails during a filling operation, the Safe Fill Station must be considered damaged beyond repair and destroyed to prevent future use.

Ensure connections are depressurized prior to performing maintenance and removal of the cylinders. Only use GENERON® IGS approved replacement parts when performing maintenance and repairs (Please see Attachments for GENERON approved parts list). Make sure that replacement parts meet or exceed the pressure requirements. The owner is responsible for maintaining the unit in a safe operating condition.

Installation, operation, maintenance and repair must be performed only by authorized, trained, and competent individuals. The operator must employ safe working precautions and rules when operating or working with mechanical and electrical pieces of equipment. Safety glasses should be worn while the cabinet door is open and/or while the machine is operating or during installation or maintenance.

Never allow high pressure gas to exhaust from an unsecured hose which may exhibit a whipping action that can cause serious injury. If a hose should burst during use, immediately close all isolation valves..
Never disable or bypass any safety relief valve.
It is the responsibility of the user to provide access to this information for personnel working around the equipment as appropriate.

1.1 Confidentiality

This document contains confidential or proprietary information of GENERON® IGS. Neither the document nor the information herein is to be reproduced, distributed, used or disclosed, either in whole or in part, except as specifically authorized by GENERON® IGS.

Overview

This manual describes the general operating and maintenance instructions for a GENERON Safe Fill Station as designed by Generon IGS. The purpose of this manual is to enable a trained operator to start-up, shutdown, make minor process adjustments, and maintain a unit which has been set-up initially by a trained Generon IGS Service representative.

This manual is not intended to instruct the user on how to perform detailed modifications or major set-up changes to the Safe Fill Station.

The information and specifications in this manual are in accordance with the information in effect at the time of printing. GENERON® IGS reserves the right to make changes without notice or incurring obligation. If the guidelines written in this manual are not followed, warranty will be voided.

Customers may direct specific questions related to the maintenance and operation of the GENERON® IGS Safe Fill Station to the GENERON® IGS Customer Service Department at 713-937-5200.
Before performing any warranty service on any GENERON® IGS Unit, have model number, serial number and brief description of warranty issue available when you call the GENERON® IGS service department.

2.1 Proper Use of the Safe Fill Station

The Safe Fill Station has been designed and tested to protect the operator and bystanders from the concussive air blast and any fragments resulting from a cylinder failure during the filling operation. Any other use has to be considered improper. GENERON® IGS has the right to void the warranty if any problem arises due to improper use.

The user must comply with the procedures listed in this manual for proper installation and operation. GENERON® IGS has the right to void the warranty for any misuse of the unit.

2.1.1 Pressurized Equipment

The GENERON® IGS Safe Fill Station is operated under pressure. Therefore, a hazardous work program should be followed when working around or servicing this equipment.
The GENERON® IGS fill station should not be subjected to excessive external forces or impact. Excessive force or impact applied to a pressurized line may result in the sudden release of pressurized air and possibly inflict injury to nearby personnel.

DEPRESSURIZE ALL LINES BEFORE DISCONNECTING LINES OR BEFORE DISASSEMBLY OF GENERON® IGS Safe Fill Station. Associated air supply lines should be shut off and locked out.
Leak checks should be performed on all piping components to ensure no compressed air is allowed to escape. When performing leak checks; use an accepted leak detection solution.

3.1 Receiving & Inspecting Equipment

Immediately remove packaging and inspect the components upon delivery to insure that no damage has taken place during transit. Notify the carrier immediately and note all damages on bill of lading and file a claim with the carrier if damage occurred. Check receipt of complete package against the packing list.

3.2 General

Proper installation and storage of the Safe Fill Station plays important part of ensuring a long life for the unit and the safety of crew.

Refer to the general arrangement (GA-plan), process and instrumentation diagram (P&ID), and the following guidelines before/during installation work.

The GENERON guidelines and recommended operation are outlined in process specific documents (like P&ID, equipment drawings, etc.) These conditions need to be followed to enable the unit to maintain safe operation. Deviation from these requirements may result in performance variation, injury to persons or machinery, and voiding of the warranty.

3.3 Placement & Installation

Properly secure the Safe Fill Station by anchoring the unit to the floor, and if possible secure the unit to a wall by using extension supports for stability. Prior to anchoring the unit ensure that the area chosen for installation is flat/level (spacers may be required to level the cabinet if necessary) and is capable of adequately supporting the weight of the cabinet.

WARNING

Failure to properly anchor the unit to the floor and/or secure the unit in an upright position may cause serious injury or death to operator or bystanders.

3.4 Installation for Units Without Cabinet Base

For mobile installations or installations where the cabinet base (8" stand) is not supplied, venting provisions must be provided beneath the Safe Fill Station to prevent restriction of the venting area. The venting area shall be equal to the open area at the bottom of the cabinet (see GA drawing for details) and shall include a deflector plate to direct the concussive air blast away from the operator's feet, in the event of a cylinder rupture.

WARNING

Restriction of the specified venting area may hinder the unit's ability to safely protect the unit operator and bystanders in the event of a cylinder failure.

3.5 Storage

When the Safe Fill Station will be off-line for an extended period of time or transported, the following guidelines should be taken into account.

Block all potential sources of pressurization, including: fill compressors and air storage banks.

Keep the system covered and/or protected from the weather. The ambient temperature should be kept between 5 and 60°C at all times.

4.1 General

The Safe Fill Station has been designed and tested to protect the operator and bystanders from the concussive air blast and any fragments resulting from an air cylinder failure during the filling operation. These fill station units are designed to be used in combination with an air storage system and/or a compressor-supplied breathing air system to refill SCBA and/or SCUBA air cylinders.

4.2 Safe Fill Station Model Designations

The model designations for the Safe Fill Stations (SFS) are as follows:

- The number immediately following the SFS will be a 1, 2 or 3 to indicate the number of fill positions available in the fill station.
- A '–M' at the end of the model number designates models designed for use with a remote air distribution panel and does not include a fill panel option.
- A '-S' at the end of the model designation designates models that are equipped with a fill panel for stand-alone operation.

5.1 Inlet Pressure Gauge (P1)

The Inlet Pressure Gauge (P1) indicates the air supply pressure to the Safe Fill Station.

5.2 Fill Pressure Regulator (R1)

The inlet air source for the Safe Fill Station flows immediately to the Fill Pressure Regulator (R1) where the required cylinder fill pressure is set. This regulator shall be adjusted until the required cylinder fill pressure is indicated on the Fill Pressure Gauge (P2).

5.3 Fill Pressure Regulator Gauge (P2)

The Regulator Pressure Regulator Gauge (P2) indicates the Fill Pressure Regulator (R1) pressure set point.

5.4 Fill Pressure Relief Valve (RV1)

The Fill Pressure Relief Valve (RV1) is factory set at 4950 psig to protect the cylinder(s) from over-pressurization in the event of a failure of the Fill Pressure Regulator (R1).

5.5 Door Interlock Valves (V1)

The Door Interlock Valves (V1) are 2-way toggle valves that are closed when in the normal or relaxed position when the fill station door is in the open position. These valves open by means of mechanical interlocks when the fill station door is closed and the locking bar drops into the locked position. These valves are installed in series and only allow compressed air to the cylinder fill hoses when both mechanical interlocks are engaged by closing and locking the fill station door.

5.6 Cylinder Fill Valve (V2)

The Cylinder Fill Valve (V2) is a high pressure panel mount valve that is used to control the supply of air to the individual cylinders for filling.

5.7 Fill Pressure Gauge (P3)

The Fill Pressure Gauge (P3) is used to monitor the pressure of the individual cylinders during filling.

5.8 Cylinder Fill Relief Valve (RV2)

The Cylinder Fill Pressure Relief Valve (RV2) allows multiple cylinder fill pressures within the same fill station enclosure.

5.9 Drain/Bleed Valve (V3)

The Drain/Bleed Valve (V3) is used to bleed off the remaining pressure in the fill hoses once the cylinder filling is complete. Once filling is complete, the cylinder valves must be closed and then the Drain/Bleed Valve (V3) must be opened to bleed off the remaining pressure in the fill hoses prior to removal of the cylinder from the fill station.

6.1 Safe Fill Station Operation (With Fill Panel Option)

From the air inlet connection on the back of the fill station compressed air flows immediately to the Fill Pressure Regulator (R1) where the required cylinder fill pressure is set and maintained. Inlet Pressure Gauge (P1) indicates the supply pressure to the fill station and Fill Pressure Regulator Gauge (P2) indicates the set pressure of the Fill Pressure Regulator (R1) allowing the operator to adjust the required cylinder fill pressure. Fill Pressure Relief Valve (RV1) protects the cylinder(s) from over-pressurization in the event of Fill Pressure Regulator (R1) failure.

The Door Interlock Valves (V1) are engaged when the fill station door is closed and the locking bar drops into the locked position. These valves prevent filling of the cylinders until the door is properly closed and locked. When the Door Interlock Valves (V1) are engaged compressed air flows from the Inlet Pressure Regulator (R1) to the Cylinder Fill Valve (V2) to allow cylinder filling through the fill hoses. Fill Pressure Gauge (P3) monitors the cylinder pressure during the filling operation.

Once the required pressure is obtained in the cylinder the operator closes the Cylinder Fill Valve (V2) to stop the flow of air. An optional Cylinder Fill Pressure Relief Valve (RV2) can be installed to allow multiple cylinder fill pressures in the same Safe Fill Station Cabinet. This optional valve will open to vent excess pressure build up within the cylinder in the event that the operator fails to close the Cylinder Fill Valve (V2) when the cylinder is full.

When the cylinder fill is completed the operator presses down on the door handle to pull the door open, which will disengage the Door Interlock Valves (V1) and shut-off the compressed air supply to the cylinders. The cylinder valves must be closed and then the Drain/Bleed Valve (V3) must be opened to bleed off the remaining pressure in the fill hoses prior to removal of the cylinder from the fill station.

6.2 Safe Fill Station Operations (Without Fill Panel Option)

For fill stations without the fill panel option the flow of compressed air is fundamentally the same, however an External Fill Panel is required for operation. The External Fill Panel will require the Inlet Pressure Gauge (P1), Fill Pressure Regulator (R1), Fill Pressure Regulator Gauge (P2), Fill Pressure Relief Valve (RV1), Cylinder Fill Valves (V2) and the Fill Pressure Gauges (P3) previously described in this manual.
The External Fill Panel Regulator (R1) will supply the required regulated compressed air to the Door Interlock Valves (V1). Once the door is closed and the locking bar drops into the locked position the Door Interlock Valves (V1) will return the compressed air supply back to the External Fill Panel Cylinder Fill Valves (V2).
The External Fill Panel Cylinder Fill Valves (V2) will control the compressed air supply to the cylinders through the fill hoses.

WARNING
Operation of the Safe Fill Station with pressures in excess of normal cylinder fill pressure is possible, therefore only authorized, trained, and competent individuals should be allowed to operate this system.

WARNING
DO NOT fill cylinders that appear to be damaged and/or indicate an outdated inspection stamp. Each cylinder and cylinder valve should be visually inspected for signs of damage prior to filling. Cylinders should be stamped with maximum allowable pressure rating and last date of inspection. Inspection and damage criteria shall be determined based upon manufacturer guidelines, as well as ASME and DOT regulations.

6.3 Fill Station Options

The base model Safe Fill Station is provided with cylinder fill hoses complete with Drain/Bleed Valve (V3) and SCBA fill adapters indicated in parts list, mechanical door interlock system, and on the '-S' models a fill control panel. Safe Fill Station Options include: cabinet base (8" stand), single function cascade, dual function cascade, and remote fill which is available only when a cascade option is selected.

6.4 Cylinder Filling Operation

1) Unlock the fill station door by pushing the fill station door handle down and then pull the door open.
2) Place the cylinder(s) to be filled into the anti-scuff cylinder sleeve and connect the fill adapter(s) to the cylinder(s) to be filled. (See Connecting an Air Cylinder, Section 6.6 for details)
3) Close the fill hose Drain/Bleed Valve(s) and open the cylinder valve(s).
4) Close the fill station door by pushing the door closed and allowing the locking bar to drop into the locked position. Cylinder filling will be prohibited until the door is properly closed and locked.
5) With the door in the closed position the cylinder holders are returned to the upright position.
6) Set the Fill Pressure Regulator to the desired fill pressure.
7) Open the Cylinder Fill Valve(s) to fill the cylinder(s).
8) The pressure indication for the Fill Pressure Gauge will rise as the cylinders are filling. Cylinder filling is complete when the Fill Pressure Gauge reaches the required pressure.
9) Close the Cylinder Fill Valve(s).
10) Unlock the fill station door by pushing the fill station door handle down and then pull the door open.
11) The cylinders are now in a tilted position.
12) Close the cylinder valve(s) and open the fill hose Drain/Bleed Valve(s).
13) Remove the fill adapter(s) from the filled cylinder(s) and place them in the hose holder(s).

6.5 Remote Fill Connection

The optional remote fill connection can be rated for up to 6000 psi service. The remote fill is located on the left side of the optional cascade panel.

6.6 Connecting an Air Cylinder

Connect to the air cylinder valve using a fill hose with the CGA-346 fill adapter for 2216 psi bottles, a CGA-347 adapter for 4500 psi bottles or a SCUBA yoke for SCUBA bottles. The CGA-347 fill adapter seals on 4500 psi rated bottle valves, but vents on lower rated pressure bottles. CGA valves should be hand tightened only.

6.6.1 Filling the Air Cylinder

1) Close the Drain/Bleed Valve on the fill hose.
2) Open the cylinder valve.
3) Adjust the regulator on the fill panel to the required fill pressure.
4) Open the Cylinder Fill Valve on the fill panel. The cylinder will begin to fill.

6.6.2 Removing the Air Cylinder

1) After the required cylinder pressure is obtained, close the Cylinder Fill Valve located on the fill panel.
2) Once you have closed the Cylinder Fill Valve, close the cylinder valve.
3) Open the Drain/Bleed Valve to bleed the residual pressure in the fill hose.
4) Disconnect the fill adapter from the air cylinder valve.

6.6 Connecting an Air Cylinder

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6.6.1 Filling the Air Cylinder

1) Close the Drain/Bleed Valve on the fill hose.
2) Open the cylinder valve.
3) Adjust the regulator on the fill panel to the required fill pressure.
4) Open the Cylinder Fill Valve on the fill panel. The cylinder will begin to fill.

6.6.2 Removing the Air Cylinder

1) After the required cylinder pressure is obtained, close the Cylinder Fill Valve located on the fill panel.
2) Once you have closed the Cylinder Fill Valve, close the cylinder valve.
3) Open the Drain/Bleed Valve to bleed the residual pressure in the fill hose.
4) Disconnect the fill adapter from the air cylinder valve.

6.7 Operating the Cascade Panel (Optional)

1) If the panel is equipped with the optional 3-way ball valve select the input air pressure source.
2) Filling from a compressor is best suited for "topping off" cylinders.
3) Filling from air storage is best suited for multiple and cascade cylinder fillings.
4) For cascade filling from air storage, open the desired Storage Bank Valve. Use the Fill Pressure Regulator to adjust the fill pressure to the required pressure.
5) Open the Cylinder Fill Valve(s) to fill the cylinder(s). The pressure indication on the Fill Pressure Gauge will begin to rise as the cylinders are filling.
6) When the Fill Pressure Gauge reaches required pressure, filling is completed.
7) If the pressures between the bank and the fill gauge equalize before the desired fill pressure is obtained, close the Storage Bank Valve in use and open another Storage Bank Valve. Repeat this procedure as necessary.
8) Close the Storage Bank Valve and the Cylinder Fill Valve(s).
9) Push the door handle down to unlock and open the door.
10) Close the cylinder valve(s) and open the fill hose Drain/Bleed Valve(s).
11) Remove the fill adapter(s) from the filled cylinder(s) and connect them to the hose holder(s).

6.8 Refilling Storage Banks

After depleting storage banks to fill cylinders, the storage banks will need to be refilled with pressurized air. To accomplish this simply ensure the Safe Fill Station Cylinder Fill Valves and Storage Bank Valves are closed. Turn on the compressor from the compressed air source. Ensure valves are open as if filling bottles in the Safe Fill Station from the compressor. The Source Selection Switch on the cascade panel should be in the "From Compressor" position. The compressor will fill the storage cylinders to their safety valve settings. After all storage banks have been filled, the compressor can be turned off if desired.

7.1 Daily Maintenance

A daily program should be developed for visual inspection of the Safe Fill Station to look for broken or missing parts.

7.2 Nonadjustable Valves

The bleed valves and check valves are not adjustable. The bleed valves have seats and seals which should be replaced if the valve leaks. Check valves are not adjustable or repairable and must be replaced if they malfunction.

7.3 Pressure Gauges

Observe the pressure gauges daily. If the readings of any of the gauges seem to be incorrect, bleed off all system pressure. Check that the gauges correctly read zero then reapply pressure to the system. If the reading is still incorrect contact Generon for service. All broken or damaged gauges must be replaced immediately.

7.4 Safety Valves

The safety valve must be checked periodically for proper function.

1) Operate the compressor with the shut-off valve closed until the safety valve vents.

2) Note the pressure registered on the pressure gauge.

The safety valve is adjusted at the factory to the required pressure and does not normally require maintenance or readjustment. In case readjustment does become necessary, have the safety valve adjusted by a Generon qualified technician (contact the Generon service department for details) or return the valve to the factory.

7.5 Pneumatic Connections

After determining that a pneumatic connection is leaking, relieve compressed air pressure and tighten just firmly enough so that leakage is stopped (finger tight plus up to an additional 1/2 turn as necessary). Please note that the compression type coupling fittings are capable of exerting extreme force on the tubing and should not be tightened more than is required to seal the joint. To improve the sealing of the pipe connections and to facilitate installation, the following should be observed:

- Apply a thin layer of Never-Seez NSWT or equivalent on the outside of the ferrule during assembly.
- Lubricate the threads of the connector with Never-Seez NSWT or a similar PFTE base lubricant to facilitate future disassembly.

7.6 Bearings for Fill Station Door Pivot

There is no need for relubrication under normal conditions.

If the setscrews should become loose, tighten as follows:

Setscrew Diameter	Hex Size	Recommended Torque (inch lbs)
5/16"	5/32"	165

7.7 Pressure Hoses

The hoses should be inspected periodically for wear and damage. If a hose is worn or damaged, remove and replace it.

7.8 Door Gas Spring

A special tool, Spring Holder, T00-0020 is required.

To remove and install a Door Gas Spring proceed as follows:

1) Place a piece of cardboard in the bottom of the door opening to protect the finish of the Door and Enclosure.
2) Remove the Door Stop and Mount from the inside rear of the Enclosure.
3) Lower the Door until it touches the cardboard.
4) Install the Spring Holder, T00-0020 and raise the Door until the Holder is holding the Door Gas Spring.
5) Remove the nut on the lower mounting stud and remove the Door Gas Spring from the Door.
6) Lower the Door and allow it to rest on the cardboard.
7) Remove the nut on the upper spring mounting stud and remove the Door Gas Spring.
8) Install the replacement Door gas Spring in the reverse order.

7.9 Standard Fill Panel Removal

The Standard Fill Panels may be removed either from the front of the unit or the rear of the unit if the rear is accessible.

7.9.1 To Remove Fill Panel From The Front (See Figure 4-5)

1) First remove the pressure from the inlet of the Fill Station, drain any residual pressure, and open the Fill Station Door.
2) Remove the Lever (3) from the Door Interlock Valve (1) by loosening the bolt on the front of the Door Interlock Valve. You may need to keep the stem of the Door Interlock Valve from turning.
3) Remove the bolts that hold the Interlock Bracket (2).
4) Lower the Interlock Bracket and disconnect the hoses that connect to the Fill Panel.
5) Remove the 4 plastic caps from the front of the Fill Panel.
6) Remove the 4 screws that hold the Fill Panel in place.
7) Pull the Fill Panel straight out the front.
8) Disconnect the Main Inlet Hose from the Regulator.
9) Install in the reverse order.

7.9.2 To Remove the Fill Panel From The Rear

1) First remove the pressure from the inlet of the Fill Station and drain any residual pressure.
2) Disconnect the hoses that connect the Fill Panel to the rear of the Fill Station.
3) Remove the 4 plastic caps from the front of the Fill Panel.
4) Remove the 4 screws that hold the Fill Panel in place.
5) Pull the Fill panel straight out the front.
6) Disconnect the Main Inlet Hose from the Regulator.
7) Install in the reverse order.

System Warranty Policy

GENERON® IGS, Inc.

System Warranty Policy

Generon IGS warrants that, at the time of installation, the on-site gas separation system (herein referred to as "System"), will conform to all applicable laws, rules, regulations and specifications then in effect, and that the System will be fit for the ordinary use(s) explicitly identified in Generon IGS's then current product literature and meet or exceed the minimum performance criteria outlined in the scope of supply.

Subject to the end user's compliance with the provisions below, the Generon IGS warranty is for a period of twelve (12) months from date of startup or eighteen (18) months from date of shipment, whichever occurs first. The warranty shall include all system models manufactured by Generon IGS fabrication facilities as approved by standard specifications and drawings supplied by Generon IGS. All major accessory equipment (i.e. compressors, metering equipment, vessels, MCCs and any equipment required for their operation) shall have warranties, which have been extended to Generon IGS, passed on to the end user. In no case shall Generon IGS warranty obligation on accessory equipment exceed the time frame of the Generon IGS system warranty.

The Generon IGS warranty scope shall include the following:

1. All parts and labor required to repair the malfunctioning component(s), which is removable and returnable to Generon IGS.

A. Generon IGS shall determine what is removable and returnable. The end user shall be responsible for submitting all warranty claims in writing to Generon IGS with date of installation, verified by shipping and/or installation documentation, and removing and shipping the component(s). If date of installation is not provided, the warranty period will be twelve (12) months from date of shipment.

B. Upon receipt of a Purchase Order from the end user, Generon IGS will ship the replacement part (s) to be installed by the end user. Generon IGS will issue a "Return Merchandise Authorization Number" (RMA) to be used by the end user, for returning the component(s) to Generon IGS. After the items(s) has been returned, Generon IGS will determine if the item(s) are covered under warranty. Generon IGS will notify the end user in writing of this determination within 60 days of item(s) receipt. If it is determined that item(s) are not covered under warranty, an invoice will be issued for all replacement parts based on list price plus a 20% handling fee. The 20% handling fee will also be invoiced in the case where no replacement parts are shipped.

2. Service work performed onsite, at the end user's request, must have a Purchase Order. If it is determined that failure was caused by end user misuse or

neglect, the cost of repair will be billable as follows: See attached Service Price Schedule attached in this section.

3. System components damaged by end user misuse will void any and all applied warranties. Misuse can be construed to be use of non-OEM replacement components, improper operation, and environmental inadequacies as determined by the original Scope of Supply.

4. Warranties are not extended to parts and components deemed to be consumable. Expendable parts are inclusive of, but not limited to, fuel cells, filter elements, oil, seals, etc.

5. Generon IGS reserves the right to replace any component(s) with a like or equivalent item(s). Said item(s) may not necessarily be new, but may be repaired item(s). Repaired and or replacement items will be included in the existing remaining warranties, but in all cases will have a minimum warranty period of 30 days.

7. The quality of feed air or other gas supplied to the System must conform to Generon IGS specifications. (See Generon IGS Scope of Supply).

8. The end user shall not attach any auxiliary equipment to the System or modify the configuration of the System without prior approval of Generon IGS, to include "borrowing" air from the compressor when the compressor is dedicated to the operation of the System.

9. User must maintain an environment around the System, which will assure its proper operation.

10. This warranty shall not extend to repair or replacement required as a result of improper operation or use of the System; or as a result of repair(s), replacement(s) or substitution(s) not specifically authorized by Generon IGS.

WARRANTY LIMITATIONS/EXCLUSIONS: The Limited warranties contained in the above paragraphs are Generon IGS's sole warranties with respect to the systems and are expressly in lieu of and preclude any warranty of fitness for a particular purpose and other express or implied representations and warranties.

LIMITATION OF REMEDY: In the event of a covered defect, Generon IGS will repair or replace the non-conforming part(s) of the System. The remedies provided herein are expressly agreed to be exclusive. IN NO EVENT SHALL GENERON IGS BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES. The foregoing limitations apply whether the claim against Generon IGS is based upon breach of warranty expressed or implied, strict liability in tort, negligence or any other cause of action.

PERIOD OF LIMITATIONS: Any and all actions for breach of warranty, must be commenced by the end user within thirty (30) days after the cause of action has occurred.

FORCE MAJEURE/ALLOCATION: In the event of war, fire, flood, strike, labor dispute, breakage of equipment, accident riot, action of governmental authority and laws, rules, ordinances and regulations including, but not limited to, those dealing with pollution, health, ecology or environmental matters, acts of God, or contingencies beyond the reasonable control of Generon IGS, materially interfering with the production, supply, transportation or consumption practice of Generon IGS at the time respecting the goods covered by this warranty, or in the event of inability to obtain on reasonable terms any raw materials due to force majeure as defined herein or due to exceptionally high demand by its customers allocate its supply of such goods or raw materials among the various uses therefore in any manner which is fair and reasonable; provided, however, that (i) Generon IGS shall have no obligation to obtain goods or raw materials from a third party in order to supply Generon IGS's excused contractual shortfall, and (ii) any goods or raw materials obtained by Generon IGS from a third party solely for Generon IGS internal use are not subject to allocation.

Field Service Rates

Field Service Rates and Schedules

All rates are Portal to Portal

All Travel Expenses are Billed at Cost + 10%

Rates are Based on 10 Hour Days

North America Land Based

Standard Rate per day	Overtime per Hour	Weekend/Holidays per day
$1,200.00	$200.00	$1,400,00

North America Offshore

Standard Rate per day	Overtime per Hour	Weekend/Holidays per day
$1,400.00	$250.00	$1,600,00

International Land Based

Standard Rate per day	Overtime per Hour	Weekend/Holidays per day
$1,400.00	$250.00	$1,600,00

International Offshore

Standard Rate per day	Overtime per Hour	Weekend/Holidays per day
$1,600.00	$275.00	$1,850,00

Schedule

North America Land Based

2 Weeks Notice

North America Offshore

2 Weeks Notice

International Land Based

4 Weeks Notice if no Visa Requierd
6 Weeks Notice if Visa Required

International Offshore

4 Weeks Notice if no Visa Requierd
6 Weeks Notice if Visa Required

Additional Information

Generon IGS requires a Purchase Order or Advance Payment, for service and expenses prior to the scheduling of a Field Service Technician's departure. Generon will provide an estimate of cost for the customer with an estimated number of days and expected travel related expenses. If an extended amount of time is requested while the technician is on site a Revised Purchase Order or Additional Payment must be received by Generon before any adjustments are made to the technician's schedule.

Travel and Expenses

Airfare is to be Business Class for International travel (10 hours or greater) and Coach Class for domestic travel. Business related living, local transportation expenses, VISA filing fees, excess baggage, and site specific training courses will be charged at the actual rate plus 10% per a copy of the Generon Technician's Expense Report.

Training

Technical, start-up, and maintenance training is available if requested by the customer and will be charged to the Customer at the current daily service rate, plus travel and living expenses