

# Standard Operating Procedure (SOP)

## **[REDACTED] Fuel Delivery for Generators A, B, C, C1**

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# Fuel Delivery (Diesel Fill 1) For Generators A, B, C, C1

## Description of Work

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Use this procedure for fuel delivery at Diesel Fill 1 for Generators A,B,C,C1

ⓘ Important: Each of the emergency backup generators at [REDACTED] location consist of a [REDACTED] capacity double walled, steel belly above ground storage tank for fuel.

**Important:** Do not perform this procedure if you are not qualified.

ⓘ Important: Please use TPVR as per policy [REDACTED]

Before starting this procedure, note the following guidelines:

- Always work safely and prioritize safety over performance and speed.
- Always follow all applicable [Environmental documentation](#).
- Provide security with the names of vendors and support services that will be on site to assist with this procedure.
- Follow the correct escalation path to ensure the right personnel are notified at the right time. If you don't know the correct escalation path for this emergency, contact the Facility Operations Center (FOC) at (DUB)+353-1 [REDACTED] and the site's facility manager (FM) for guidance.

## Safety Requirements

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Follow the [Safety Briefing](#) procedure to identify safety hazards and correctly mitigate those hazards to minimize risk to personnel.






- For assistance understanding the safety requirements for this procedure, contact your regional safety engineer at [REDACTED] to access data center safety documentation.

## Important Indicators and Acronyms

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The following indicators identify critical steps in this SOP:

# Fuel Delivery (Diesel Fill 1) For Generators A, B, C, C1

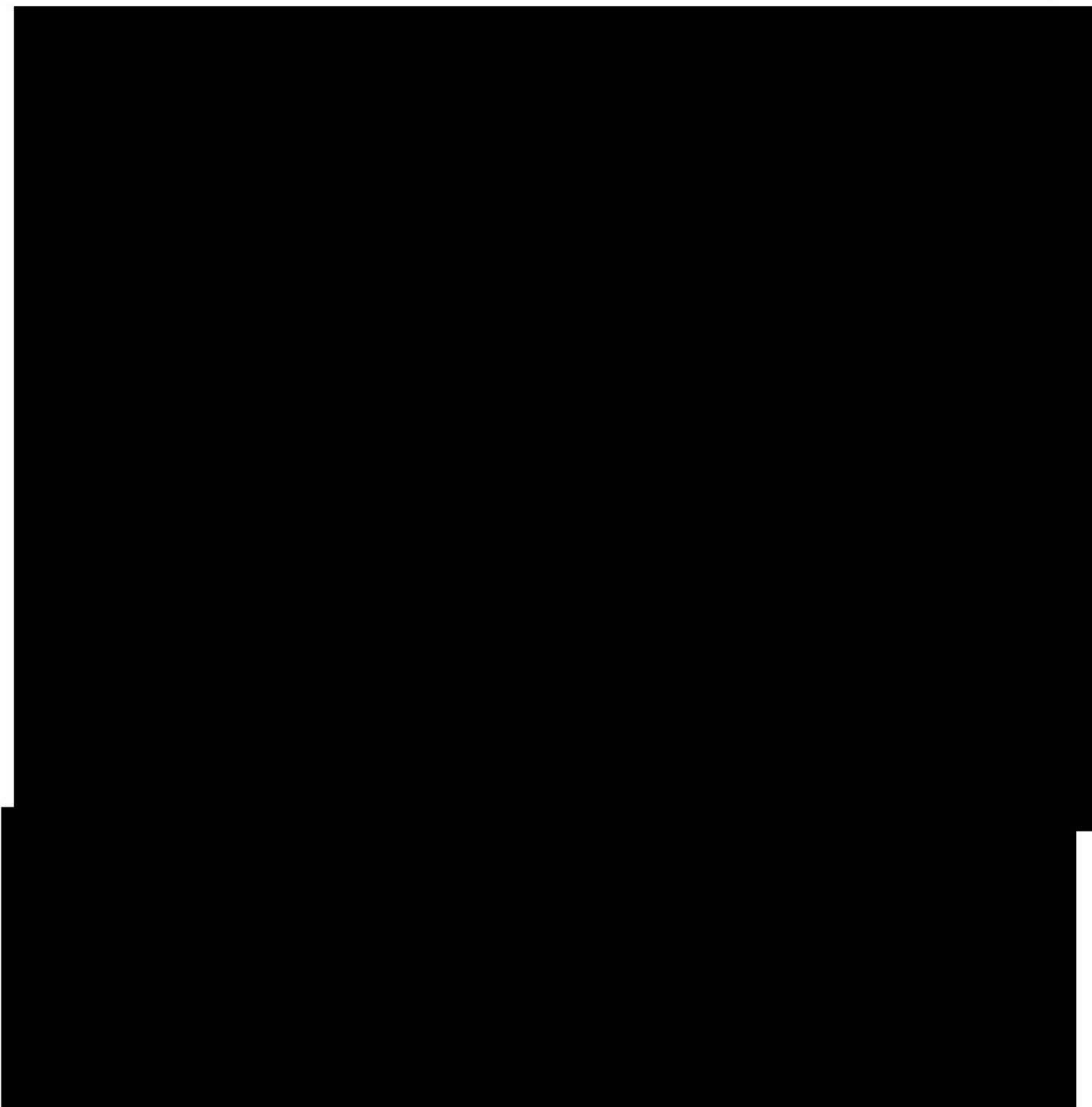
Graphic Symbol	Indicates
	Change of state
	Safety alert
	Rollback here, if necessary
	Stop, validate/verify/go no go
	Important note

For acronyms and abbreviations that aren't defined in this procedure refer to the [DCEO Terms and Acronyms List](#)

**Fuel Delivery (Diesel Fill 1) For Generators  
A, B, C, C1**

Refueling vehicle entry/exit routes

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# Fuel Delivery (Diesel Fill 1) For Generators A, B, C, C1

## Vendor Information

If a vendor is participating in this SOP, provide the following information (add rows as necessary):

Item	Description
Company Name	[REDACTED]
Service Contact Information (24x7)	[REDACTED]

**Note:** Ensure vendors are briefed on the work they will be doing. Vendors must review Safety, Security, and other DC rules.

## Employee Information

Provide information about everyone participating in this SOP (add rows as necessary).

Group	Name / title	Alias/Contact #	Role	Initials
<i>Internal (blue badge)</i>				
	EOT		Checks and rollback	
	EOT		Monitoring BMS	
<i>External (Vendor)</i>				
	Driver		Delivering fuel	
<i>Escalation Contacts</i>				

# Fuel Delivery (Diesel Fill 1) For Generators A, B, C, C1

## Expected Alarms

Provide a complete list of all alarms expected to occur during this procedure.

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## Affected Equipment

List all equipment that will be worked on, shut off, or locked out during this procedure.

Equipment Name	Manufacturer	Model #	Serial #	Rating/Capacity
Diesel Fill 1	Cummins			
Generator Fuel Tank A	Cummins			
Generator Fuel Tank B	Cummins			
Generator Fuel Tank C	Cummins			
Generator Fuel Tank C1	Cummins			







# Fuel Delivery (Diesel Fill 1) For Generators A, B, C, C1

## Required PPE, Tools, and Materials






List the personal protective equipment (PPE), tools, and materials needed to do this procedure.

PPE/Tools/Materials	Reason needed
Laptop	Building Management System (BMS) - To ensure that the Diesel level does not exceed limits
Universal Panel Key	To open Diesel Fill 1 Enclosure
Safety glasses	General PPE
Safety Boots	General PPE
Hi-Visibility Clothing	General PPE
nitrile or latex gloves	General PPE
Aprons (optional)	General PPE
Spill Kit	On standby for deployment in the instance of a spill occurring
Drain Covers	Available at the re-fill point to be deployed before re-fuelling commences

## Pre-Work and Mitigation Steps

Section 1: Perform Pre-Work and Mitigation Steps				Completed by
Step	Location	Equipment	Action/Task	Initials
1.0.	DCEO Office	N/A	  DCEO to assess MCM and ensure risk assessment has been provided for unloading fuel.	
1.1.	DCEO Office	N/A	  Verify proper safety equipment and additional forms/permits.	
1.2.	DCEO Office	N/A	 Check local weather conditions.	
1.3.	DCEO Office	N/A	 Points to note for the diesel delivery system. <ul style="list-style-type: none"> <li>Generator fuel tank actuator closes at 90% of each Generator tank's total capacity.</li> <li>High alarm at 90% of each Generator tank's total capacity.</li> <li>High high alarm at 95% of each Generator tank's total capacity.</li> <li>A local alarm on each Generators Fuel Fill Panel will alert when tank is 90% full. A notification will also be received on BMS.</li> </ul>	

# Fuel Delivery (Diesel Fill 1) For Generators A, B, C, C1

1.4.	DCEO Office	N/A	  Monitoring of the Fuel Fill Panel and BMS is essential to ensure that during filling a faulty actuator will not result in overfilling of the tank and diesel in the bunded area.
1.5.	DCEO Office	BMS/Fuel Fill Panel	Take note of how many litres are in each Generator tank _____ Litres.
1.6.	DCEO Office	N/A	Calculate how many litres are required and inform the driver _____ Litres.
1.7.	DCEO Office	N/A	Identify the role of each person participating in the procedure, and identify each person's assigned location and each person's roles/responsibilities.  Additional personnel may be required for monitoring of BMS.
1.8.	Re-fuelling area	Drains	DCEO to Cover all down gradient storm drains during fuelling activities to form active secondary containment.
1.9.	Gen Yard	Gen D,E,F,C2	 Ensure that there are no works taking place in the immediate area.
1.10.	Gen Yard	Gen D,E,F,C2	 Check Diesel pipework and filling area have no leaks.
1.11.	Diesel Fill 2	Diesel fill Adaptor	Ensure that the delivery driver has the correct adapter for _____ diesel fill pipe.
1.12.	Gen Yard / Office	Laptop/ BMS	Ensure Generator Yard BMS is been monitored.









Summary: Pre-work data is collected. Safety meeting is conducted. Roles and responsibilities are assigned. Teams have been notified.

If any discrepancies are found in steps 1.0 through 1.11, immediately stop and escalate




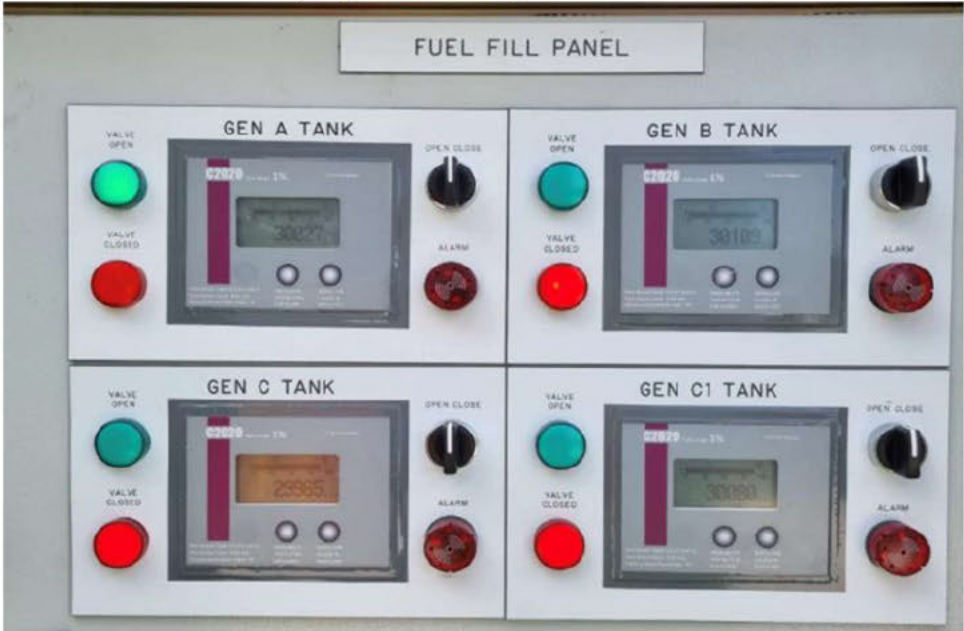

# Fuel Delivery (Diesel Fill 1) For Generators A, B, C, C1

## Procedure

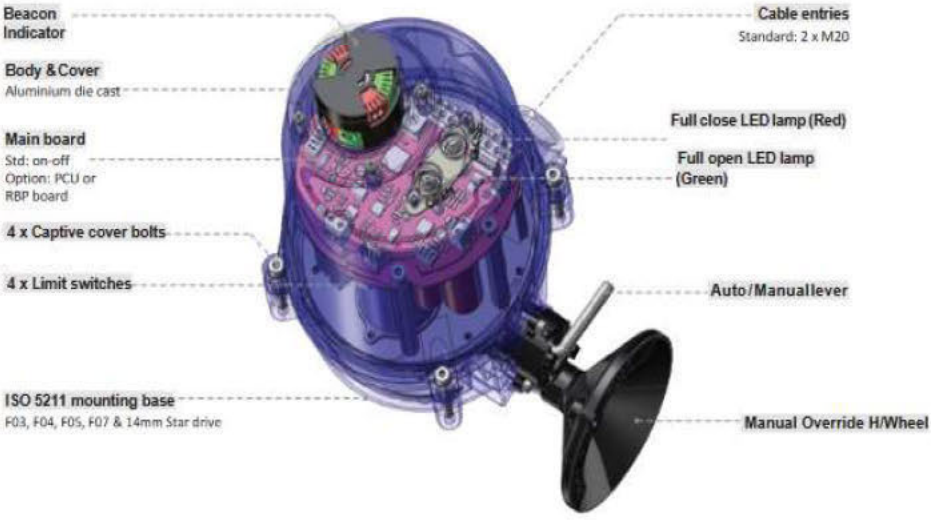



Section 2: Procedure - Filling of Generator A,B,C,C1 Fuel Tanks				Completed by
Step	Location	Equipment	Action/Task	Initials
 <b>Minimum PPE Required: Safety Boots, Safety glasses, Hearing protection.</b>				
   If at any point in this section the tank over fills proceed to Section 4: Rollback—				
2.1.	Security Gate	N/A	When fuel vendor arrives on site, Security personnel must notify ██████ personnel of all fueling activities and remain present during all fueling activities.	
2.2	Diesel Fill 1	Gen A,B,C,C1	DCEO to deploy Barrier & Signage prior to fuelling	
2.3	Diesel Fill	Gen A,B,C,C1	DCEO to perform checks on Fuel delivery driver: <ul style="list-style-type: none"> <li>• Level of English is adequate;</li> <li>• That the driver has a valid ADR Card;</li> <li>• The driver is familiar and trained with loading and unloading processes;</li> <li>• That the traffic management arrangements have been communicated to and understood, including pedestrian interfaces;</li> <li>• That the driver is informed verbally of the local site hazards;</li> <li>• That a DSG note is provided;</li> <li>• Transport documents to be provided.</li> </ul>	
2.4.	Diesel Fill 1	Gen A,B,C,C1	 Conduct a safety inspection of the delivery area: <ul style="list-style-type: none"> <li>• Ensure there is a serviceable fire extinguisher available on the fuel truck and in the generator enclosure.</li> <li>• Smoking or any activity that can cause sparks or flames is prohibited during fuel transfer operations.</li> <li>• DCEO to ensure that drip tray/spill container at refill point is empty.</li> </ul> Ensure spill control equipment is readily available to clean up small spills, which at a minimum will include granular absorbent, absorbent pads and brooms, shovels, and an empty drum.	
2.5.	Security Gate	N/A	 DCEO personnel will obtain a bill of lading from the fuel vendor truck operator to verify that it specifies the correct fuel product (ultra-low sulphur diesel fuel) and specify the volume to be delivered.	
2.6.	Security Gate	N/A	AWS Security personnel unlock gate (as applicable) and direct the driver to the unloading location.	











# Fuel Delivery (Diesel Fill 1) For Generators A, B, C, C1

2.7.	Diesel Fill 1	N/A	Truck operator turns off truck motor unless required for unloading.	
2.8.	Diesel Fill 1	Universal Panel Key	DCEO personnel will unlock and open Diesel Fill 1 enclosure access door using Universal Panel Key and open the fill pipe spill container cover.	
2.9.	Diesel Fill 1	Fuel Fill Panel	 DCEO personnel will verify the current amount of product in Generator A,B,C,C1 tanks by indication on corresponding control panels located inside Diesel Fill 1 enclosure	
2.10.	Diesel Fill 1	N/A	DCEO will verify delivery volume with Truck Operator. Truck Operator will adjust unloading pump to load the Generator tanks with only the requested and verified volume.	
2.11.	Diesel Fill 1	Fuel Fill Panel	DCEO will OPEN the selected Generator Tanks fuel Actuator by switching the selector switch on the top right of the designated Fuel Fill Panel to OPEN. 	
2.12.	Diesel Fill 1	Fuel Fill Panel	When the selected Generator Tanks fuel Actuator is OPEN, a green light in the top left corner of the corresponding Fuel Fill Panel will illuminate (GREEN).	
2.13.	Gen A,B,C,C1	Fuel Actuator	 If the selected fuel Actuator does not open, the Actuator may be manually operated. The fuel Actuator is located at the rear of each Generator.	

# Fuel Delivery (Diesel Fill 1) For Generators A, B, C, C1


			 <p>The diagram shows a fuel actuator assembly with the following labeled parts:</p> <ul style="list-style-type: none"> <li>Beacon Indicator</li> <li>Body &amp; Cover: Aluminium die cast</li> <li>Main board: Std: on-off; Option: PCU or RBP board</li> <li>4 x Captive cover bolts</li> <li>4 x Limit switches</li> <li>ISO 5211 mounting base: F03, F04, F05, F07 &amp; 14mm Star drive</li> <li>Cable entries: Standard: 2 x M20</li> <li>Full close LED lamp (Red)</li> <li>Full open LED lamp (Green)</li> <li>Auto/Manual lever</li> <li>Manual Override H/Wheel</li> </ul> <p><b>To operate fuel Actuator to manually OPEN:</b></p> <ol style="list-style-type: none"> <li>1. Operate the Auto/Manual Lever located at the base of the Override wheel.</li> <li>2. Rotate the Manual Override Wheel in a counter-clockwise direction to OPEN.</li> <li>3. Confirm Fuel Actuator is now OPEN, Full OPEN LED lamp (Green) will illuminate on the Fuel Actuator.</li> </ol> <p><b>To operate fuel Actuator to manually CLOSE:</b></p> <ol style="list-style-type: none"> <li>1. Operate the Auto/Manual Lever located at the base of the Override wheel.</li> <li>2. Rotate the Manual Override Wheel in a clockwise direction to CLOSE.</li> <li>3. Confirm Fuel Actuator is now CLOSED, Full CLOSED LED lamp (RED) will illuminate on the Fuel Actuator</li> </ol>	
2.14.	Diesel Fill 1		<p>The Truck Operator can now proceed to initiate the unloading of their tank truck. During the unloading, truck operator and DCEO must be within 25 feet and in view of unloading lines at all times. The maximum fuel transfer rate provided by the fuel vendor is approximately 60 to 70 gallons per minute.</p> <ul style="list-style-type: none"> <li> In the event of a spill proceed to the rollback steps.</li> <li> In the event of a Fuel High Level alarm immediately secure fuel loading.</li> <li> The Max permitted fuel level is <span style="background-color: black; color: black;">██████████</span> per Generator tank</li> </ul>	

# Fuel Delivery (Diesel Fill 1) For Generators A, B, C, C1


2.15.	Diesel Fill 1	Control Panel/BMS	 DCEO to monitor the filling to prevent overfilling	
2.16.	Diesel Fill 1	Fuel Fill Panel	An Audio/Visual alarm will sound/illuminate when the tank level reaches 	
2.17.	Diesel Fill 1	Fuel Fill Panel	DCEO personnel will verify final tank levels.	
2.18.	Diesel Fill 1	Fuel Fill Panel	When designated Fuel Tank has reached its required level, DCEO will CLOSE the selected Generator Tanks fuel Actuator by switching the selector switch on the top right of the designated Fuel Fill Panel to CLOSE.	
2.29.	Diesel Fill 1	Fuel Fill Panel	When the selected Generator Tanks fuel Actuator is CLOSED, a RED light in the top left corner of the corresponding Fuel Fill Panel will illuminate (RED).	
2.20.	Diesel Fill 1	Fuel Fill Panel	 If more than one Generator Tank requires fuel, repeat steps 2.9.-2.17. on each designated Generators control panel.	
2.21.	Diesel Fill 1	Diesel Fill 1 Pipe Connection	DCEO will supervise as the Truck Operator disconnects loading hose, ensuring that all product remains in the hose or is contained in the spill container (if applicable) and secures the fill cap back on the fuel tank inlet.	
2.22.	Diesel Fill 1	Diesel Fill 1 Pipe Connection	DCEO to ensure that all fuel ports are secured after fill is complete.	
2.23.	Diesel Fill 1	General Area	 Truck operator cleans up any oil spills, including any product contained in the spill container (if applicable) before leaving area. Prior to departure, the driver and DCEO personnel are required to do a visual walk around inspection of the fuel truck.   DCEO personnel must file trouble ticket if any spill was observed.	
2.24.	Diesel Fill 1	Diesel Fill 1 Pipe Connection	DCEO personnel shall verify condition of fill pipe area to ensure that any spills have been addressed. DCEO personnel shall document this information on the bill of lading.	
2.25.	Gen Yard	Gen A,B,C,C1	  Check Generators A,B,C,C1 to ensure all areas have no spills.	
2.26.	DCEO Office	Permit Folder	DCEO shall retain copies of the bill of lading and fuel loading receipt in the Permit to Operate binder.	
 Stage Summary: Filling of Generator A,B,C,C1 Diesel Tanks has been completed.				

## Validation Steps

# Fuel Delivery (Diesel Fill 1) For Generators A, B, C, C1

Section 3: Verify Normal Operations				Completed by
Step	Location	Equipment	Action/Task	Initials
3.1.	Gen Yard	Fuel Actuator	Each Generators tank fill actuator is now in the closed position.	
3.2.	DCEO Office	Excel	Fill readings match vendors readings.	
3.3.	Gen Yard	Sop	There are no leaks in the Generator area or fill area.	
3.4.	Diesel Fill 1	BMS and Control Panel	Take note of how many litres are in each main tank _____ Litres.	
3.5.	Diesel Fill 1	Delivery docket	Take note of how many litres were delivered by the driver _____ Litres.	
3.6.	Fuel Fill Panel and BMS	Laptop/ BMS	Fuel Fill Panel and BMS shows each tank fill actuator in the closed position.	
 Stage Summary: Validation data is collected. Filling has been completed and delivery quantity verified.				

## Rollback Steps

Section 4: Rollback—Rollback—				Completed by
Step	Location	Equipment	Action/Task	Initials
4.1.		SPCC Plan	In the event of a spill, refer to the SPCC Plan and follow the instructions. Notify CE, FM and Regional Environmental Engineer.	
4.2.	Diesel Fill 1 and Gen Yard	Fill point And Gen A,B,C,C1	Perform spill clean-up if required.	
4.3.	Diesel Fill 1	Fuel Actuator	In the event of a Fuel Actuator failing to close by operation of HMI at Fuel Fill Panel. Manually CLOSE each Fuel Actuator as illustrated in step 2.11.	
 Stage Summary: Delivery has been halted and issue escalated.				

## Technical / Related Documentation

Title	Issue/Revision

# Fuel Delivery (Diesel Fill 1) For Generators A, B, C, C1


## Comments

Following the procedure, use this section to identify any issues or additional information for future use.

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## Document Information

Version	Date	Author(s)	Approved by	Approved by
1.0	25/07/2021			
1.1	02/06/2022			
1.2	25/06/2022			
1.3	20/10/2022			