DARK MATTER REACTOR
GENERATOR-01 PROTOTYPE MANUAL

QUANTUM SCIENCE MADISON RESEARCH CENTER



VERSION NO. 1A7.2C (RESTORED)

WRITTEN BY: BIDEOTRAI135

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INTRODUCTION

This manual is a remake version of the old manual written by *DrAlexDamaging and EarlyVerifiedBotDev*. Due to today, there's no new official DMR manual yet since QSST / QAD are busy. The main priority of this Manual is to replace the old one since the versions are Pre-Kerman, before the new DMR / Reactor Chamber Remaster Update and to teach new players how to operate the DMR in the current update and other functions. Old DMR Manual link for those who like to read it.

DARK MATTER REACTOR GENERATOR 01 PROTOTYPE MANUAL

Want to read another Manual made by me? Sure.

DARK MATTER REACTOR MECHANIC MANUAL KERMAN

This is **NOT the Official DMR Manual,** some of the content may change in the game! However, if you notice some mistake in the manual please contact me to fix it. Discord Account: **Bideo135**

The DMR Operation Manual was written around 7/29/2024
The manual will get updated if there's some mistake in the manual. Thank you for reporting mistakes while reading the manual!

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DMR & CONTROL ROOM INFORMATION

DMR Operations Control Room Layout



1. Primary Control Desk	**5. Catalyzers Control Desk**
2. Monitor Control Desk	**6. Thermal Control Desk**
3. Coolant Pumps Info Desk	**7. Electrical Info Desk**
4. Maintenance Desk	**8. Emergency Systems**

DMR Additional Information

1. Reactor Temperature that deplete below 275 Kelvin will cause a Combustion Stall if below this Temperature for a long period time.
2. Reactor Temperature that exceeds 3500 Kelvin will not inevitably cause a Thermal Runaway (MELTDOWN) Structure Integrity will deplete if the Temperature is kept at that level, until the Structure Integrity reaches 10%.

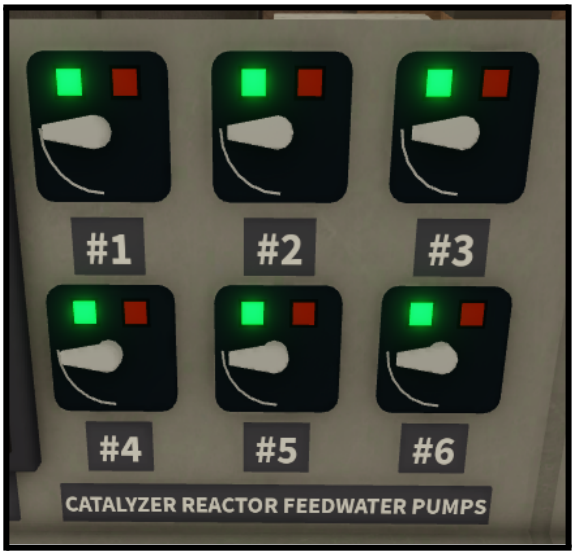
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DMR IGNITION

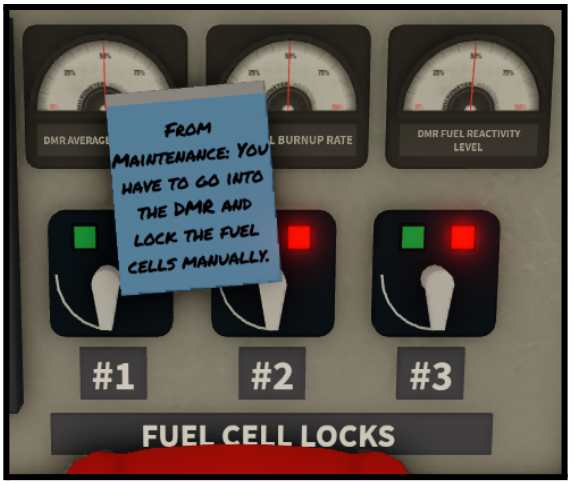
Ignition Procedure

Starting the DMR is a simple process with only 5 Steps that you must follow, after the ignition of the reactor the system will automatically trigger the automated startup sequence.
Steps 1 - 5 Can be done in any order but Step 6 must be done last.

INSTRUCTIONS	DIAGRAM
1. Using the Catalyzer Feed water pumps active all 6 switches (You can active any switches from 1 - 6) Located in the Middle Desk Between Fine CAT Control and Global CAT Control. (At the Catalyzer Control Desk)	

2. ~~Using the Fuel Cell locks, active all 3 switches.~~

Due to all 3 switches being broken you have to enter the Core chamber and go into the DMR and have to lock the fuel cell Manually!

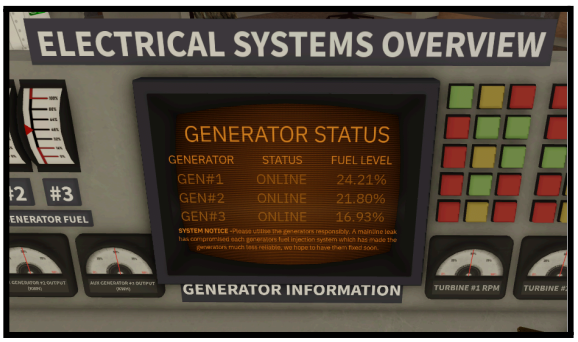


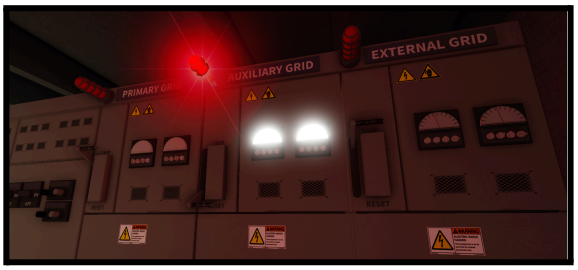
3. Using the Catalyzer Calibration Module, use the arrows so that the yellow line is in the center.
(At the Primary Control Desk)



4. Make sure that the Electrical Systems are active by having the grid Switch to Auxiliary Grid. You may have to check 3 Generators' Fuel Level at the Electric System Overview desk.

(Grid Room at SL-2, Generation Information at Electrical Info Desk)





5. In the control room, turn the key next to the red button on the ignition panel desk, after turning the key the cover will open and you can now push the button. (At Primary Control Desk) **THIS ACTION CANNOT BE UNDONE!**	

After the button gets pushed, evacuate from the Internal Combustion Chamber to avoid being exposed to Dangerous High Lethal Radiation from the Ignition of the Catalyzer you only have 20 Seconds!

<u>If the Startup fails, please wait for the system to detect the problem and repeat Step 5.</u>

ELECTRICAL SYSTEMS

The Electrical Grid Systems power the entire Facility from those automatic sensor doors to the DMR Control Room and other areas. Maintaining the Grid Systems is to keep the Facility operating up and running, preventing any unwanted situation while operating the DMR.

(IF YOU SEE "CORPORATE+" NEXT TO THE INFO IT MEAN YOU NEED THE ROLE TO DO THAT)
(WHILE IF THERE'S NONE IT MEANS YOU ONLY NEED TO JOIN THE MAINTENANCE TEAM!)

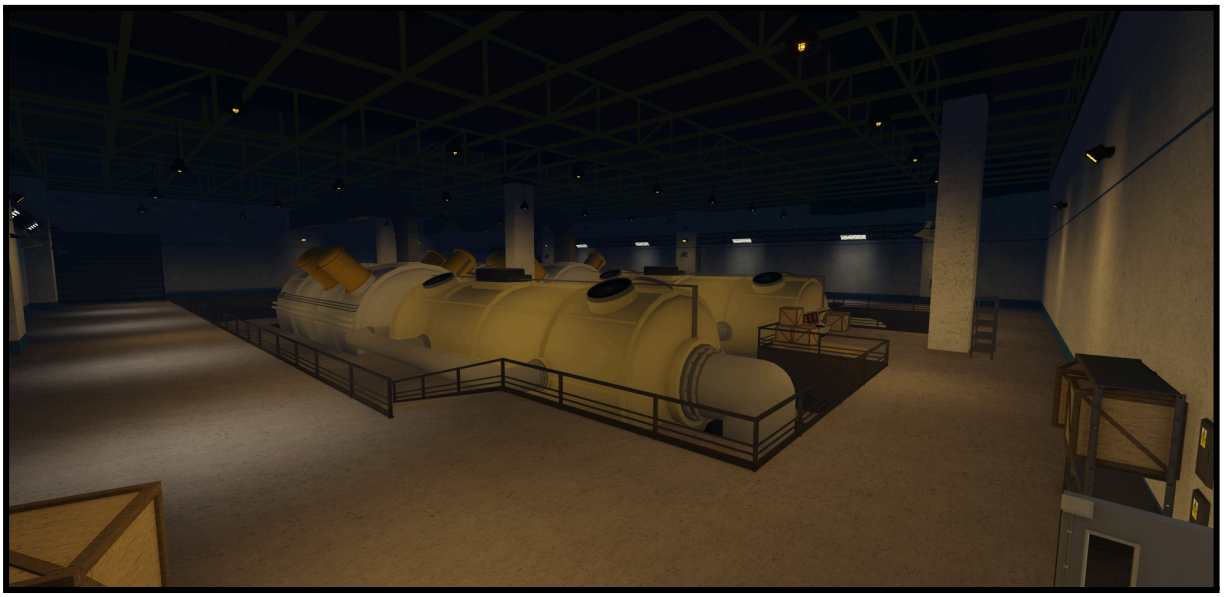
Electrical Grid Information

GRID SETTINGS	INFORMATION
PRIMARY GRID	The primary is run by the Turbines, Turbines don't require Fuel but it requires the Steam from the DMR which must be Online and one Turbine activated to use the grid.
AUXILIARY GRID	The Auxiliary Grid is run by the Generators, F-9. Generators require Fuel to operate, all generators must be activated to use the grid.
EXTERNAL GRID	The External Grid Requires no attention or further action from the Maintenance. It does not completely power the entire facility.

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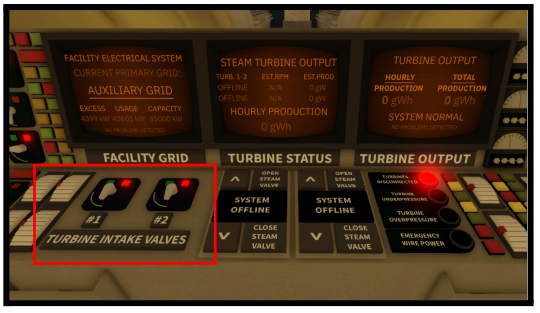
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Turbine Information

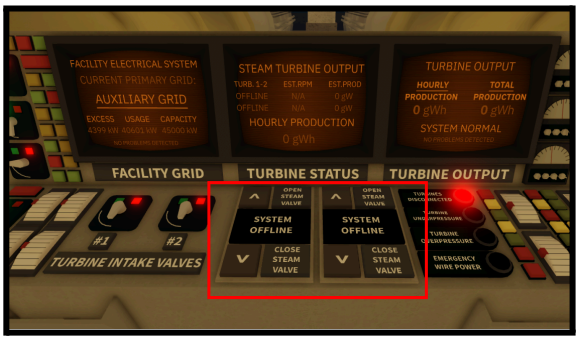


Activating the Turbines

1. Requires DMR to be online (Refer to DMR ignition for activation)
2. Requires the Turbine to be Active (Refer below)

Information	Diagram
To activate the Turbines, make sure the DMR is online and active one Turbine Intake Valves for activation (Both can be turned on) To Deactivate, deactivate both Turbine Intake Valves. **(CORPORATE+)**	

STEAM VALVES

Information	Diagram
The steam Valves control the Amount of Steam Entering the Turbines, it can be set around 10% - 100%, this may affect the amount of Electricity the Turbines will produce.	

If the turbine overpressures, the chance of the turbine blowing up is very high! Please Decrease the steam level in the turbine to avoid the turbine from being blown up!



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Generator Information



Activating the Generators

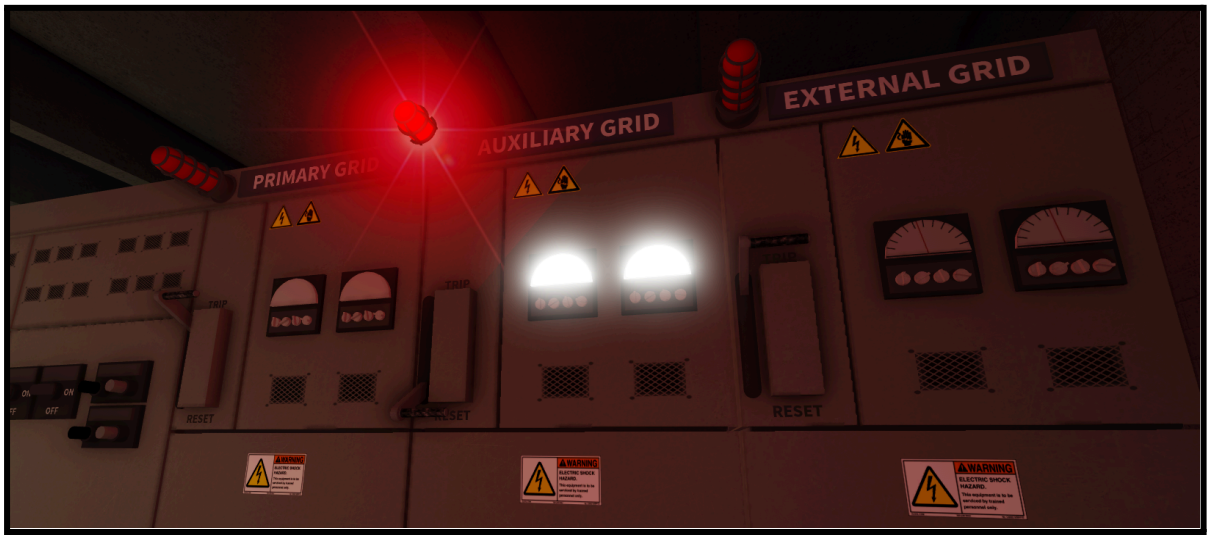
1. Make sure all the Generators are Fueled before igniting them.
2. To refuel the Generators make sure the Fuel Level must be below 50% to refuel.

Information	Diagram
To refuel the Generator, make sure that the Generator must be offline, then refuel the Generator by taking “Generator Canister” to the intake. After that Press the START button, to re-active the Generator.	

To activate the Generator you only have to press the START button and wait for a second for it to completely operate. To deactivate the Generator you only need to press the E-STOP button to stop the generator Operating. **(CORPORATE+)** Or the Grid is Primary Grid which doesn't need to be a corporate to deactivate it.	

If the shelf ran out of Generator canisters you can order some by going to Sector-A Cargo Area to get some Canisters.

To use Primary Grid or Auxiliary Grid just pull the Corresponding Breaker switch to activate that Grid. **(ONLY PULL PRIMARY AND AUXILIARY ONLY!)**



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COOLANT SYSTEMS

The Coolant Systems in the facility have a very important role since they control the Temperature of the DMR and Catalyzers. And they both are separate coolant systems and most coolant supplies come from the outside world.

DMR INTERNAL COOLANT LOOP & EXTERNAL COOLANT LOOP

& REACTOR HEAT SINK



Information

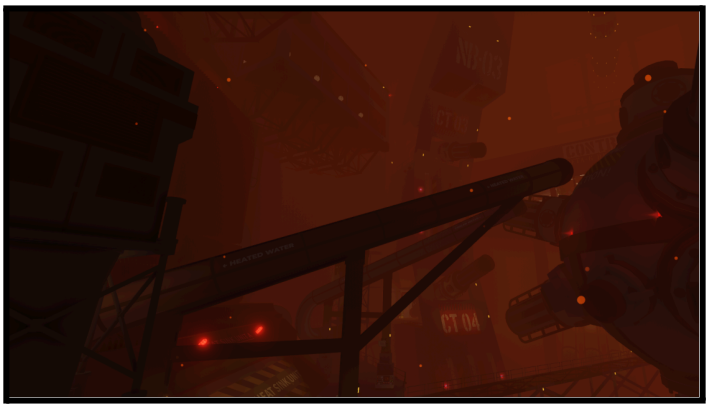
The role of the DMR Internal Coolant Loop and External Coolant Loop was to cool down the DMR, by sending Cooled Water from the Reactor Heat Sink Unit to the External Coolant Pump, then getting sent to the Internal Coolant Loop. After minutes, the Cooled Water inside the Internal Coolant Loop becomes Heated Water then returns to another External Coolant Pump and goes through the Reactor Heat Sink to transfer the Heated Water into Cooled Water.

A few images of the DMR External Coolant Loop.





Cooled Water Pipe.



Heated Water Pipe.

The Internal Coolant Loop pipes surround the center of the Reactor, you can see it by entering the Internal Combustion Chamber inside of the DMR. You will see Cooled Water Pipes and Heated Water pipes. If you are wondering what it looks like it is not much different from a coolant pump but just larger.

DMR EXTERNAL COOLANT LOOP CONTROL

There are two Monitor desks to control the Coolant Pump of the DMR External Coolant loop. The Coolant Pumps are automatically activated after the DMR ignition. To Deactivate the pumps, deactivate the Circulation Pump, Intel Valve, and Outlet Valve. To completely Deactivate DMR External Coolant Loop deactivate both of the Coolant pumps.



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PUMP STATION ALPHA

The Pump Station Alpha controls the production of Coolant that will decrease the Temperature of the Catalyzer.



Activating Step	Diagram
Active the Intake, then Pump Motor and the Outtake to completely activate the Pumps. Activating the Pump Systems requires only One Pump to be online but is it recommended that both Systems be online.	

Information

Some basic information has been explained at the top, here's some note, **Pump Station Alpha is for Catalyzers only** (According to the DMR Monitor) not for the DMR since it already has its Coolant Loops.

> Refer to DMR Internal Coolant Loop & External Coolant Loop DMR Operation Manual 8



CATALYZER COOLANT LOOPS

Catalyzers Coolant Loops are connected with Pump Station Alpha, its role is to cool down the Catalyzers Reactor, it also makes the Catalyzer more Efficient depending on the Temperature of the Catalyzers helping the Reactor Heat Faster.



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EMERGENCY SYSTEMS

The Emergency Systems are fail safes that ensure the safety of the DMR and wellbeing of all Employees and Civilians.

Emergency Fire Suppression System (EFSS)

The purpose of the Emergency Fire Suppression System is to prevent fires from occurring on the DMR. Stopping the fire spreading to the entire Reactor Chamber.





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Engaging the EFSS

The EFSS could be engaged at any moment if the DMR is online, however, please note that only Corporate+ and above are authorized to trigger the system if needed. Activating this system will drastically decrease the DMR Temperature at a rapid rate. The best Temperature to engage the EFSS is around 3600 K - 4000 K.

Procedure	Diagram
To activate the EFSS Pumps, you have to go CODEX DECK and climb to the Control Area, engage the Outtake Valve, Intake Valve, and the Pump Motor.	
After engaging the Pump, wait for the CODEX Water Level to reach approximately 70%. The EFSS system requires at least 50% to engage.	

After CODEX Tanks are filled, the pump will automatically disengage the Pump Motor in the CODEX.	
To engage the EFSS, arm the system by turning the key and push the button. **This Action cannot be undone!**	

Emergency Pressure Release System

(EPRS)

The purpose of the Emergency Pressure Release System is to release the amount of High Pressure inside the Internal Structure of the DMR. This was to replace the Pressure Relief in an Emergency Situation.

Engaging the EPRS

The EPRS could be engaged at any moment if the DMR is online, however, please note that only Corporate+ and above are authorized to trigger the system if needed. Activating this system will drastically decrease the DMR Temperature at a rapid rate. The best Temperature to engage the EPRS is around 3600 K - 4000 K to prevent Stall.

Procedure	Diagram
To engage the EPRS, arm the system by turning the key and push the button. **This Action cannot be undone!**	

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DMR Emergency Shutdown

DMR Emergency Shutdown have a very Important Role is to stop the DMR from melting down, prevent a terrible accident while the DMR is operating, and ensure the safety of Civilians and Employees.



Engaging the Emergency Shutdown

To engage the Emergency Shutdown. Firstly the Code Red (MELTDOWN) must be declared by the Automated System.

Shutdown Prerequisites

1. **DMR Temperature must be below 3000 Kelvin.**
2. **All the Catalyzers are Functional.**
3. **EFSS Water Tank Capacity of 70% or above.**

Procedure	Diagram
After the Code Red is Declared, enter the five digit shutdown code and input it into the keypad. Once the Code is inserted, turn both keys to open the cover and push the Button.	

<u>You have 2 Minutes</u> to Input the code and press the button. If the time expires, the Emergency Shutdown will no longer be effective.

If the Code is Unknown, the Automated System will try to guess the code showing on the second DMR Monitor, the chance of guessing the correct code is very small.

[redacted]

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From Dr. Weldman

Employees,
This shutdown method can fail if the following procedures and prerequisites are not performed. There is a theoretical secondary shutdown method if the first method has failed, but note this, this method is **HIGHLY DANGEROUS**. By my calculations, this method **can only occur 25% of the time**, so evacuate to Tartarus or to a Blast Shelter if you manage to be in the 75%.

Requirements:
3+ Employees in the DMR Chamber (Recommended, but not mandatory)
Radiation Seal NOT SEALED (IF SEALED, THIS METHOD WILL NOT WORK)

In the DMR Chamber once entering the Internal Combustion Chamber,, three personnel must man one of the fuel cell sockets around DMR. At the right time, all personnel must eject the fuel cell within 1-3 seconds of ejecting. Failure to eject at the same time will still continue on with the thermal runaway.

Good Luck Employees.

DMR REFUELING

The DMR requires it to be constantly fueled to continue energy production if the Fuel Cell average is below 20%.

Types of Fuel Cells		
Cell Type	**Description**	**Hadron Collider Chance**
Efficient	This Fuel Cell is designed to conserve fuel at the cost of heating the DMR slowly.	**[10% on Hadron Collider]**
Generic	This Fuel Cell is the standard fuel cell that is recommended in regular operations. It is designed to moderately heat the DMR at the cost of moderately burning out fuel.	**[65% on Hadron Collider]**
Reactive	This fuel cell is designed to quickly heat the DMR at the cost of quickly burning out the fuel cells.	**[20% on Hadron Collider]**
Super	This fuel cell is designed to quickly, but moderately heat the DMR. Fuel cell depletion is similar to Generic Cells.	**[5% on Hadron Collider]**

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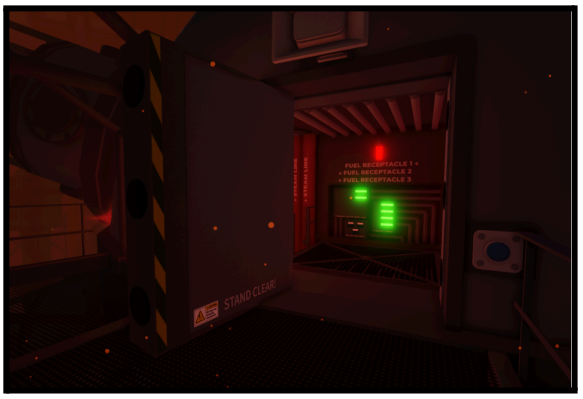
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DMR Refueling Procedure

Activating the Maintenance Mode

The Maintenance mode and its role is to Refuel the DMR and repair the DMR to keep the reactor operating.

Procedure	Diagram
When the Fuel Average is below 20%, turn both keys and press the Button. Wait for the Catalyzers to deactivate and wait for the reactor slowly lowering.	
After maintenance mode is activated, bring any type of Fuel Cell along with your Hazmat Suit into the Core Chamber.	

Procedure	Diagram
Once you are on the DMR catwalk, press the Blue Button to open the Pressure Seal, and enter the Internal Combustion Chamber for refueling. And to Anyone that's outside the Internal Combustion chamber **keep the Pressure Seal open.**	
After entering the combustion chamber, go to the Fuel Cell location, eject the old Fuel Cell by pulling the lever until the light turns red, take out the old Fuel Cell, and install the new Fuel Cell with same lever. After replacing the new Fuel Cell, **please evacuate from the combustion chamber for the re-ignition of the DMR.**	

To re-ignition the DMR, push the Maintenance Button Again go to the Ignition Desk turn the key, and push the button to ignite the DMR.

> Refer to DMR Ignition DMR Operation Manual 5

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DMR & CONTROL ROOM INFORMATION

DMR Operations Control Room Layout



1. Primary Control Desk	**5. Catalyzers Control Desk**
2. Monitor Control Desk	**6. Thermal Control Desk**
3. Coolant Pumps Info Desk	**7. Electrical Info Desk**
4. Maintenance Desk	**8. Emergency Systems**

DMR Additional Information

3. Reactor Temperature that deplete below 275 Kelvin will cause a Combustion Stall if below this Temperature for a long period time.
4. Reactor Temperature that exceeds 3500 Kelvin will not inevitably cause a Thermal Runaway (MELTDOWN) Structure Integrity will deplete if the Temperature is kept at that level, until the Structure Integrity reaches 10%.

Control Room Control Modules In Depth

Primary Control Desk

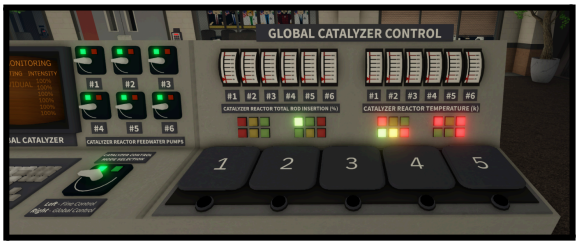
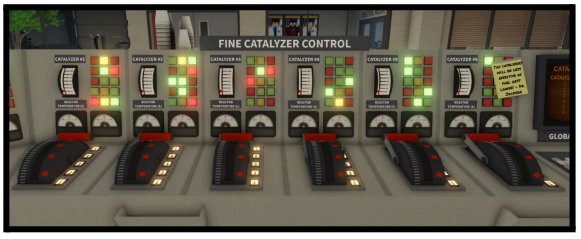
The Primary Control Desk, most functions are explained in the DMR IGNITION pages from step to step. Except for the Alarm Overview, the alarm overview and its purpose is to notify the Employee through the Alarm Panel.



Each light will turn Red if the Automatic System detects some problem. You can mute the Alarm by pressing the Blue Button to Mute the Alarm Temporary.

Catalyzers Control Desk

The Catalyzers Control Desk is to control the Neutron Input of the Catalyzers into the DMR, having other functions like activating Feedwater Pumps for Catalyzers Ignition and temperature of Each Catalyzers.

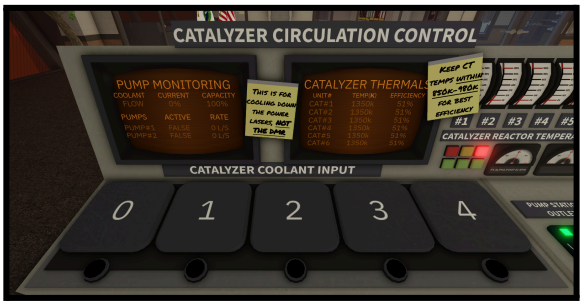
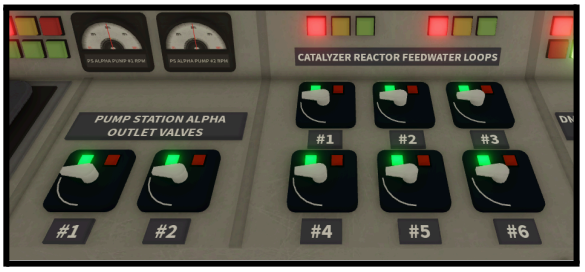
MODULE	DIAGRAM
Global Catalyzer Control - This Module regulates the intensity of the Catalyzers as Grouped.	
Local Catalyzer Control - This module regulates the intensity of EACH individual Catalyzers.	
Catalyzer Control Mode Selection - This module switches the Power Laser mode from Individual to Grouped. **Individual:** This will specifically set the Catalyzers to a specific amount of power transferred to the DMR. **Grouped:** Controls all of the Catalyzers at the same time.	

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Thermal Control Desk

The Thermal Control Desk is to manage all controls regarding coolant flow towards the DMR and Catalyzers Coolant.

MODULE	DIAGRAM
Catalyzer Circulation Control - This Module regulates the coolant flow into the Catalyzers. - To effectively use this module, all Catalyzer Feedwater Loops must be activated along with Both or One Pump Station Alpha Pumps and Outtake Valves. <u>Highly Recommend to keep the Temperature Of Catalyzers between 850K - 980K.</u>	 
Superstructure Circulation Control - This module regulates the coolant flow into the Reactor. - To effectively use this module active both Regenerator and both Pump Outlet Valves	

Emergency System Desk

> Refer to EFSS section on DMR Operation Manual 11
> Refer to EPRS section on DMR Operation Manual 12

MODULE	DIAGRAM
Pressure Relief - Pressure Relief is to release the amount of High Pressure inside the Internal Structure of the DMR, helping the Reactor cool down. - To activate Pressure Relief, click one or four of the valves. It will affect the Reactor Temperature until the Thermal Cap reaches 60 and deactivates, please wait for some minutes to activate the valve. <u>These won't be effective if the Reactor Temperature is too High.</u>	

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Monitor Control Desk

The monitor control desk manages the Reactor Shutdown module and Shift Manager and Power Order Request terminal and Airlock.

> Refer to DMR Emergency Shutdown section on DMR Operation Manual 13

MODULE	DIAGRAM
SHIFT MANAGER & GRID ENERGY REQUEST SYSTEM - These monitors will regularly send requests on parameters needed to be set on the DMR. Tiers will be awarded on completing a request while failure will lead to a loss in tier.	

FULFILLING POWER ORDER REQUESTS

Power Order Request will be shown through the "Power Order Request" monitor. Requests vary throughout the shift once an Order is Completed/ Failed.

These requests can include:

1. Keeping the DMR stable at a certain temperature for a specified amount of time.

2. Generating a certain amount of gWh for a specified amount of time.

Tiers will be awarded for completing a power order, while failing a power order will subtracts a few points.

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END OF DMR OPERATION MANUAL

Thank you for reading the DMR Manual. I hope it teaches you something about the DMR and its mechanics! But for the second time, this is NOT THE OFFICIAL DMR Operation Manual from QAD, some information is not 100% accurate with the game or the lore or matches with the current update, this is only to help you to control the DMR, know how it will work likes Catalyzer, Coolant, ETC.
If you wish to see Official things check out the link below!

Madison Research Center Training Program - Epi…

Here's a few notes about the video, some content like from the DMR Monitor, Dials are unfortunately outdated since it was recorded before the Kerman Update released to the public. But however don't worry, the mechanic is still the same so try your best to control the DMR, if you forgot some information you can read them again.

SOME INFORMATION MAY CHANGES!!!

There's a very HIGH chance the Electrical System will be changed since the Developers are remaking them from the building to the function, it would take time to research and learn the new mechanic so please be patient!

UPDATE LOG #1 *(7/29/2024 - 12/31/2024)*

VERSION NO. 1A: Begin of the Documents. Added Table of content, introduction, DMR Ignition and Electrical Systems pages.
VERSION NO. 1A1: Add Coolant Systems, Emergency Systems pages, fix some minor spelling mistakes and rewrite some information.
VERSION NO. 1A2: Add DMR Refueling pages, fix some minor spelling mistakes and add more new information to the document.
VERSION NO. 1A3: Add DMR & Control Room information and DMR Refueling pages and update some information in the document.
VERSION NO. 1A4: Add more information in Coolant Systems, Electrical Systems and DMR & Control Room information pages.
Version NO. 1A5: Document published to the Public in #Creators-Corner, fix some minor spelling mistakes, rewrite some information and add more information.
Version NO. 1A6: Fixed minor spelling mistakes, add more new pages to the document in DMR & Control Room.
Version NO. 1A7: Fully fixed every minor spelling mistake in every page.
Version NO. 1A7.1: Fixed some information in the document.
Version NO. 1A7.2: Allowed the user to print the document.
Version NO. 1A7.2B: Replace old S1-2 image, Pump Station Alpha image to newer version of the game. Also add Christmas decoration in the document.
Version NO. 1A7.2C: Remove Christmas decoration, add DMR Operations Control Room layout at the top of the document, add some small information in the DMR IGNITION pages.

UPDATE LOG #2 *(1/30/2025 - XX/XX/2026)*

RESTORED VERSION 1A7.2C: Google account got fucked, please be aware.