Instructions

Background:

The year is 2045. The world needs reliable power, and it needs it now. The days of fossil fuels are gone, and governments around the world are determined to reach Net Zero Carbon Dioxide emissions. Nuclear power is the best chance we have of providing electricity sustainably and reliably, and the planet needs YOU to help build new nuclear reactors.

Objective:

Score the most points by building and powering on your own nuclear reactors!

Quick Information:

- **Players: 2 – 5**
- **Age: 11+**
- **Time: 30 minutes – 90 minutes**

Race to Reactor Game Box Contents:

- **A rulebook (this book)**
- **234 playing cards, divided up as follows:**

Card Type	Card Name	Deck Amounts	
		Personal (5 sets)	Communal
Reactor Components	Neutron	4	3
	Uranium	4	3
	Control Rods	4	3
	Coolant	4	3
	Moderator	4	3
	Turbine	4	3
Actions	Dismantle	2	1
	Industry Investment	0	3
	Swap	1	1
	Operator Promotion	0	3
	Steal	1	0
	Discard	0	2
	Power On	2	5
	Reprocess	1	3
	Project Delays	1	3
	Shutdown	0	1
	Half-Life	0	2
Reactor Upgrades	Enrichment	1	0
	Steam Surge	1	0
	Neutron Flux	1	0
	New Research Breakthrough	0	1
	Colour Confinement	0	2
	Depletion	0	2
	Protect	1	1
	SMR	1	1
	Totals	37	49
		234	

Getting Started:

Each player chooses a coloured deck of cards (red, blue, green, yellow, or purple). If there are fewer than 5 players, the colour(s) not chosen are not included in the game.

Collect all the cards of your chosen colour and shuffle them into a pile; this is your personal deck. 10 random cards from each player's personal deck are then shuffled into the communal deck. The communal deck will consist of 10 coloured cards from each player, and all the neutral (grey) cards.

Gameplay:

To start the game each player picks up 5 cards from their personal deck. At any point in the game, if you have duplicated reactor parts in your hand at any time (these are numbered 1-6 in the top left), you must discard both into a discard pile immediately. Do not replace the discarded cards. This rule applies only to reactor parts, not to upgrade/action cards. For example, if the first 2 of 5 cards you pick up are duplicates, you must discard both before drawing the remaining 3 cards that you have left to draw.

Once each player has picked up (and resolved any duplicated cards), choose a player to begin.

To begin your turn; draw 2 cards from the communal deck and 1 card from your personal deck.

A few points to remember:

- Players must have 8 or fewer cards at the end of their turn.
- Players can play 4 cards total per turn.
- Reactor components are played in front of you (numbered 1-6) and action cards once used are placed into the discard pile.
- Upgrade cards are played to the side of the component being upgraded, and Protect and SMR cards are played above the reactor to be upgraded.
- You must have the reactor component played in front of you to use any associated upgrade card. If an upgraded reactor component is discarded from the table, then the upgrades are also discarded.
- You can have up to 2 reactors in front of you.
- You cannot play two of the same reactor components in a single reactor.

To end your turn, pass a card to any other player, if you have cards remaining in your hand. The next player then takes their turn.

If you have more than 8 cards in your hand after passing a card to another player, you must discard cards until you have 8 in your hand.

How to Score Points:

Points are scored by playing a 'Power On' card onto a complete reactor (1-6 reactor components played on the table). Each coloured (non-grey) reactor component in the powered-on reactor gives a point to the person whose colour the component is, and the first player to power on a reactor gets a bonus +2 points.

After tallying points, whoever played the 'Power On' card shuffles their coloured reactor components back into the communal deck.

You can power on other people's reactors, but not if they are protected.

Reactor Component Card Designs:

1 NEUTRON
DID YOU KNOW?
WHEN URANIUM ATOMS SPLIT, ENERGY IS RELEASED WHICH CAN BE TURNED INTO ELECTRICITY- THIS IS NUCLEAR FISSION!

2 URANIUM U235
DID YOU KNOW?
URANIUM IS AN ELEMENT IN THE PERIODIC TABLE THAT HAS 92 PROTONS IN ITS NUCLEUS.

3 CONTROL RODS
DID YOU KNOW?
CONTROL ROADS ABSORB REACTING NEUTRONS AND CAN STOP A FISSION REACTION IN ITS TRACKS.

4 COOLANT
DID YOU KNOW?
WHEN METAL SHEETS ARE MANUFACTURED, NUCLEAR BETA DECAY IS USED TO MEASURE THEIR THICKNESS!

5 MODERATOR
DID YOU KNOW?
ALMOST ALL CURRENTLY OPERATING NUCLEAR POWER PLANTS USE WATER AS THEIR COOLANT AND MODERATOR.

6 TURBINE
DID YOU KNOW?
NUCLEAR REACTORS ARE ESSENTIALLY GIANT KETTLES, THEY'RE JUST HEATING WATER!

Action Card Designs:

! DISMANTLE
ACTION
DISCARD A COMPONENT OF ANOTHER PLAYER'S REACTOR.

! INDUSTRY INVESTMENT
ACTION
DRAW 3 CARDS FROM THE COMMUNAL PILE

! SWAP
ACTION
SWAP A CARD IN YOUR REACTOR FOR ONE IN SOMEONE ELSE'S

! OPERATOR PROMOTION
ACTION
DRAW 2 CARDS FROM YOUR PERSONAL PILE

STEAL — ACTION
TAKE A CARD FROM SOMEONE ELSE'S HAND

DISCARD — ACTION
DISCARD A CARD FROM SOMEONE ELSE'S HAND

POWER ON — ACTION
ONCE YOU HAVE A COMPLETE REACTOR, PLAY THIS CARD TO GENERATE POWER (AND GAIN POINTS!)

REPROCESS — UPGRADE
PICK UP A CARD FROM THE DISCARD PILE

PROJECT DELAYS — ACTION
CHOOSE A PLAYER TO SKIP A TURN

SHUT DOWN — ACTION
CHOOSE A PLAYER TO SHUT DOWN (AND DISCARD) ONE OF THEIR REACTORS

HALF-LIFE — ACTION
REMOVE ALL OF YOUR COLOUR CARDS FROM THE TABLE AND GET HALF OF THE POINTS

Reactor Upgrades Card Designs:

ENRICHMENT — UPGRADE
THIS CARD UPGRADES URANIUM (DOUBLES THE SCORE OF THE CARD, AND +1 POINT TO THE PLAYER WHOSE REACTOR IT IS PLAYED ON!)

STEAM SURGE — UPGRADE
THIS CARD UPGRADES TURBINE (+1 POINT TO THE PLAYER WHOSE REACTOR IT IS!)

NEUTRON FLUX — UPGRADE
THIS CARD UPGRADES NEUTRONS (+1 POINT TO THE PLAYER WHOSE REACTOR IT IS)

NEW RESEARCH BREAKTHROUGH — UPGRADE
A NEW RESEARCH BREAKTHROUGH ALLOWS YOU TO UPGRADE ANY COMPONENT OF YOUR REACTOR

COLOUR CONFINEMENT — UPGRADE
CHANGE THE COLOUR OF ANY REACTOR COMPONENT

SMALL MODULAR REACTOR — UPGRADE
COMPLETE YOUR REACTOR WITH ANY 4 DIFFERENT REACTOR COMPONENTS

PROTECT — ACTION
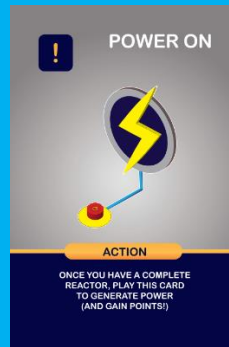NO PLAYER CAN DAMAGE A REACTOR WITH THIS CARD PLAYED ON IT.
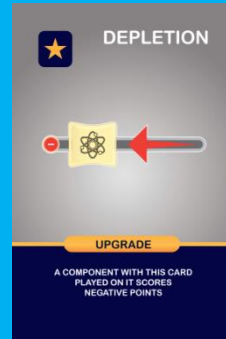
DEPLETION — UPGRADE
A COMPONENT WITH THIS CARD PLAYED ON IT SCORES NEGATIVE POINTS
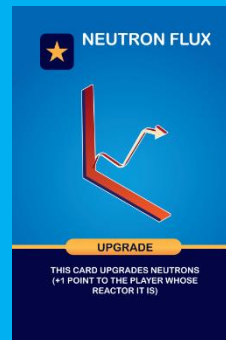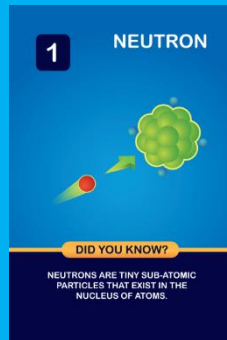
Gameplay Example:

Blue plays 'Power On' on their own reactor, which looks as follows:

1 Green with depletion upgrade card: 1 base point for green, but depletion turns it to -1, GREEN -1

2 Blue with neutron flux upgrade: 1 base point for blue, neutron flux upgrade doubles to 2, and +1 for upgrade card being played in their reactor, BLUE +3
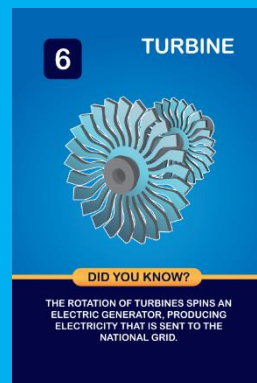

3 Blue, BLUE +1

4 Red, RED +1

5 Neutral, 0

6 Blue, BLUE +1

Totals: GREEN -1, BLUE +5, RED +1

Blue 2,3,6 shuffled into communal deck

Ending the Game:

The winner is the first player to score a total of 20 points.

Note: If two players reach 20 (or more) at the same time, the winner is the player with the highest total points. If they are still tied, then the player who triggered the gain in points is declared the winner!

Cards Explained:

Card Name	Description
Dismantle	Discard a component of a reactor from the table.
Industry Investment	Draw 3 cards from the communal deck.
Swap	Swap a reactor component from one reactor to another, or from your hand with a component on the table.
Operator Promotion	Draw 2 cards from your personal deck.
Steal	Randomly take a card from someone else's hand
Protect	No other player can modify a reactor with this card played on it.
Power On	Power means points! Once you have a complete reactor, play this card to generate power! Tally up the points and shuffle your coloured components back into the communal deck.
Reprocess	Pick up any reactor component card (numbered 1 to 6) from the discard pile.
Project Delays	Choose a player to skip a turn.
SMR	Complete your reactor with any 4 different reactor components.
Shutdown	Discard an entire reactor. This card can be played on protected reactors.
New Research Breakthrough	This card can be used to upgrade any reactor component. (doubles the score of the card, and +1 point to the player whose reactor it is played on!)
Colour Confinement	Change the colour of any reactor component.
Half-Life	Discard all components of one colour on the table. That player receives 0.5 points per card discarded.
Discard	Discard a card from someone else's hand.
Steal	Take a card from some else's hand.
Depletion	Play this on any component card. Any points that the card scores become negative.
Enrichment	This card upgrades uranium (doubles the score of the card, and +1 point to the player whose reactor it is played on!)
Steam Surge	This card upgrades turbine (doubles the score of the card, and +1 point to the player whose reactor it is played on!)
Neutron Flux	This card upgrades neutron (doubles the score of the card, and +1 point to the player whose reactor it is played on!)

Overlooked rules:

- The duplicate rule, please discard both reactor parts.
- You do not have to play the cards in order of 1 – 6, and you do not have to have all 6 components in your hand before playing.
- Upgrades: you receive double points of the card itself and the reactor it is played on receives another point.
- Do not forget to pass a card at the end of your turn.
- The first player to power on a reactor gets a bonus of +2 points.
- You can only play a swap card if components are not duplicated within the reactor. Upgrade cards are not swapped.
- You can only work on two reactors at a time on the table.
- You can only discard cards if you have more than 8 at the end of your turn.
- You can play upgrade cards and power on cards on the reactors of other players.
- After you power on a reactor, don't forget to shuffle your coloured cards back into the deck.
- You cannot upgrade a component more than once.

Quick Play Mode:

For a shorter game, choose a colour as normal, but don't shuffle any coloured cards into the communal deck. Remove all upgrade cards from the game. To begin a turn, draw two cards from your personal deck, and one from the communal deck. The first player to complete and power on two reactors on the table (regardless of colour) wins! All other rules still apply.