



**PRODUCE THE BEST SIMULATOR IN THE WORLD  
MAKE TRAINING MORE EFFICIENT**

MISSION: Promote training • Reduce accidents • Benefit the society  
VALUE: Kindness • Integrity • Honesty • Mutual Trust • Win-win  
RESPONSIBILITY: Creating value for customers

# Belief

We firmly believe that life is above everything else! We respect life, and we follow this spirit throughout the designing, producing and servicing of each product, and enable our clients to get the maximum value and superior experience. We do everything we can to bring safety to every petroleum worker.



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Esimtech was formally established in 2009. Its predecessor was a research group of the School of Computer Science, Southwest Petroleum University. Since the establishment of the research group in 1992, Esimtech has always been committed to the development of simulation training system in the oil and gas industry, and has successively developed more than ten kinds of petroleum engineering simulators. Esimtech also provides customized service such as industrial animation, VR simulation training system and large software system. It has 135 patents, 39 software copyrights, high-tech enterprise certification and other certificates of honor, and has technical achievements with independently intellectual property rights. Today, Esimtech has the most comprehensive product lines and world-leading technological level. Its products have been applied in major training centres of CNPC, SINOPEC and CNOOC, and exported to the major training centers in the UAE, the United States, Mexico, Colombia, Malaysia, Indonesia, Kenya, Venezuela and other countries.

# About Us

# Timeline

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## 1992 Year

Established research and development team to research and develop drilling simulation training system

## 1995 Year

Successfully developed DS-1 drilling simulation training system

## 1997 Year

Successfully developed DS-2 drilling simulation training system

## 2000 Year

Successfully developed DS-3 drilling simulation training system

## 2001 Year

Established the Computer Application Technology Research Institute of Southwest Petroleum University

## 2003 Year

Successfully developed DS-4 type drilling simulation training system

## 2005 Year

Successfully developed DS-5 drilling simulation training system

Successfully developed DS-6 drilling simulation training system

## 2006 Year

Successfully developed DS-7 drilling simulation training system

Successfully developed down hole operation simulation training system

## 2007 Year

Established Petroleum Engineering and Computer Simulation Technology University Key Laboratory of Sichuan Province  
Successfully developed DS-9 drilling simulation training system

## 2008 Year

Successfully developed logging simulation training system

## 2009 Year

Established Chengdu Esimtech Petroleum Equipment Simulation Technology exploitation Co., Ltd  
Successfully developed DS-8 drilling simulation training system

## 2010 Year

Successfully developed fracturing and acidizing simulation training system

## 2011 Year

Successfully developed oli and gas production simulation training system

Successfully developed land rig insrallation simulation training system

## 2012 Year

Successfully developed logging simulation training system

Successfully developed top drive training room simulation training system

Successfully developed DS-11 drilling simulation training system

## 2013 Year

Successfully developed non-sequence drilling simulation training system

## 2014 Year

Successfully developed portable snubbing simulation training system

Successfully developed full size snubbing simulation training system

## 2015 Year

Successfully developed oli recovery standardized training system

Successfully developed open well logging simulation training system

## 2016 Year

Company name changed into Chengdu Esimtech Petroleum Equipment Simulation Technology Co., Ltd  
Successfully developed oli recovery standardized training system

Successfully developed emergency exercise VR coordinated training system

## 2017 Year

Successfully developed coiled tubing simulation training system

## 2018 Year

Successfully developed drilling emergency practice supervisory training system

## 2019 Year

Successfully developed drilling emergency practice training platform

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# Product Overview

## Product Series



## Features

<b>Comprehensiveness</b> the most comprehensive product series in the world's petroleum simulation training industry	<b>Customization</b> customized software and hardware	<b>Preciseness</b> precise mathematical and physical model
<b>Service</b> timely and considerate after-sales service	<b>Reliability</b> stable and reliable software and hardware	<b>Reality</b> highly realistic 3D scene display

## Qualification Certificates



135 Patent	39 Copyright	7 Qualification Certificates
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# Drilling and Well Control

## • Full Size Drilling Simulator



### Function

Full size drilling simulator can provide training for different posts, such as driller, assistant driller, supervisor, drilling engineer, etc. This simulation training can enable candidates to master the skills of conventional/unconventional well killing, soft/hard shut-in and down hole problems judging and handling.

### Training Items



### • Preparation

- Leak-off test
- Slow circulating rates test
- Negative pressure test
- Functional test and pressure test

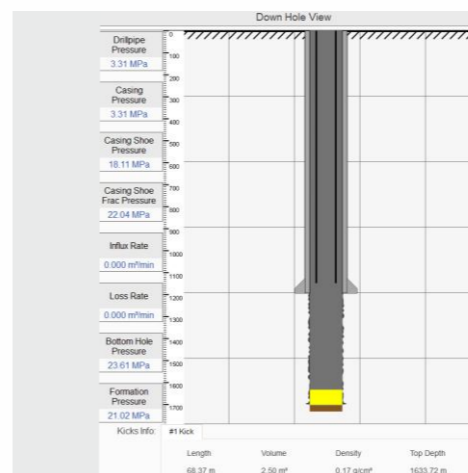
### • Conventional Operation

- Normal drilling
- Normal tripping in
- Normal tripping out



### • Shut-in Operation

- Shutting in operation when kick occurs during drilling
- Shutting in operation when kick occurs during tripping out drill pipe
- Stripping in
- Shutting in operation when kick occurs during tripping out drill collar
- Shutting in while out of hole



### • Well Killing Operation

- Driller's method
- Engineer's method
- Volumetric method
- Bullheading
- Low choking method
- Standpipe pressure method

• Cementing



Running casing

Drilling cement plug

Cementing

• Judging and Handling of Down Hole Problems

Getting blocked when tripping in

Getting stuck when tripping out

Sand settling

Wall sticking

Key seat sticking

Balling up

Hole caving sticking

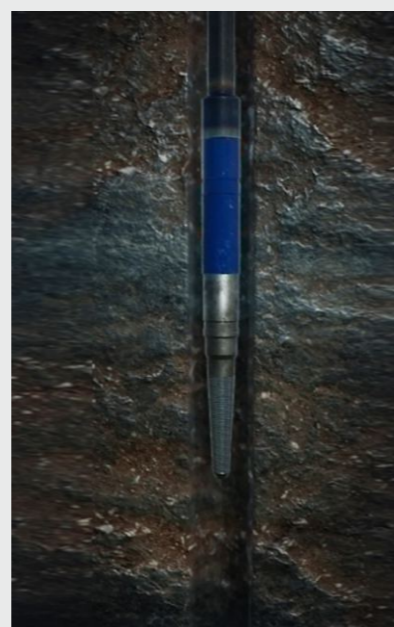
Hole shrinkage sticking

Fishing tap

Junk milling

Drilling with bouncing bit

Drilling in leakage zone



• Portable Well Control Simulator

Function

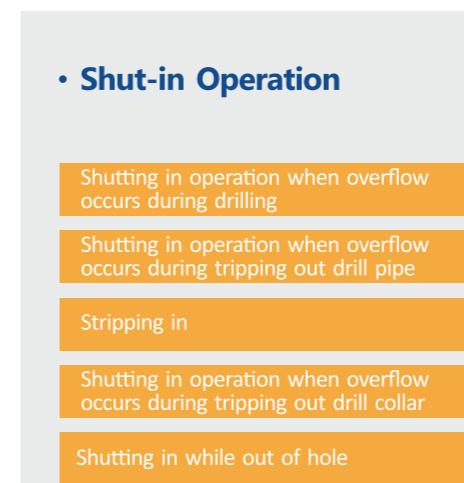
Portable well control simulator can provide training for different posts, such as driller, assistant driller, supervisor, drilling engineer, etc. The simulation training can enable trainees to master the skills of soft/hard shut-in, and conventional/unconventional well killing.





### • Conventional Operation

- Normal drilling
- Normal tripping in
- Normal tripping out



### • Shut-in Operation

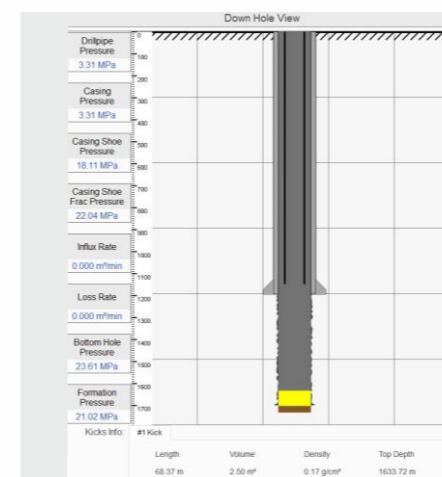
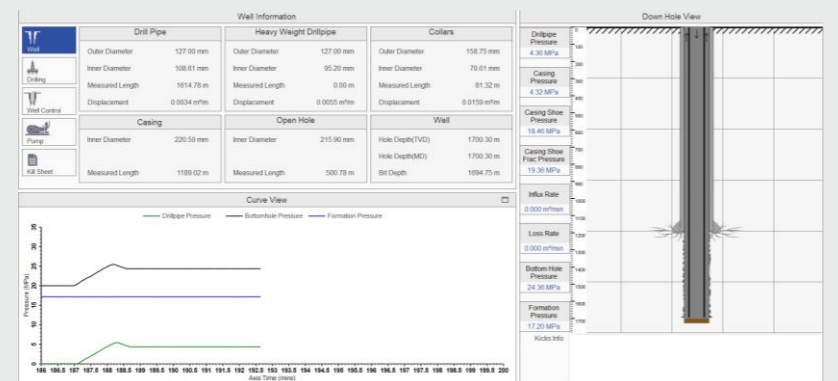
- Shutting in operation when overflow occurs during drilling
- Shutting in operation when overflow occurs during tripping out drill pipe
- Stripping in
- Shutting in operation when overflow occurs during tripping out drill collar
- Shutting in while out of hole



## Training Items

### • Preparation

- Leak-off test
- Slow circulating rates test
- Negative pressure test
- Functional test and pressure test



### • Well Killing Operation

- Driller's method
- Engineer's method
- Volumetric method
- Bullheading
- Low choking method
- Standpipe pressure method





## • Cyberchair Drilling Simulator

### Function

Cyberchair drilling simulator contains onshore version and offshore version. It can simulate various working conditions of onshore/offshore drilling and well control.

## Training Items (Onshore)

### • Preparation

Leak-off test  
Slow circulating rates test  
Negative pressure test  
Functional test and pressure test

### • Conventional Operation

Normal drilling  
Normal tripping in/out  
Back reaming

### • Shut-in Operation

Shutting in operation when kick occurs during drilling  
Shutting in operation when kick occurs during tripping out drill pipe  
Shutting in operation when kick occurs during tripping out drill collar  
Shutting in while out of hole

### • Well Control Operation

Driller's method  
Engineer's method

Volumetric method  
Bullheading  
Low choking method  
Standpipe pressure method

### • Cementing

Running casing  
Drilling out plug  
Cementing

### • Judging and Handling of Down Hole Problems

Getting blocked when tripping in	Junk milling
Getting stuck when tripping out	Drilling with bouncing bit
Sand settling	Drilling in leakage zone
Wall sticking	
Key seat sticking	
Balling up	
Hole caving sticking	
Hole shrinkage sticking	
Fishing tap	

## Taining Items (Offshore)

### • Preparation

- Leak-off test
- Slow circulating rates test
- Negative pressure test
- Functional test and pressure test

### • Conventional Operation

- Normal drilling
- Normal tripping in/out
- Back reaming

### • Shut-in Operation

- Shutting in operation when kick occurs during drilling
- Shutting in operation when kick occurs during tripping out drill pipe
- Shutting in operation when kick occurs during tripping out drill collar
- Shutting in while out of hole

### • Well Control Operation

- Driller's method
- Engineer's method

Volumetric method

Bullheading

Low choking method

Standpipe pressure method

Discharge trapped gas under BOP

Discharge influx in riser

Replace original mud with kill mud

### • Cementing

Running casing

Drilling cement plug

Cementing

### • Judging and Handling of Down Hole Problems

Getting blocked when tripping in

Getting stuck when tripping out

Sand settling

Wall sticking

Key seat sticking

Balling up

Hole caving sticking

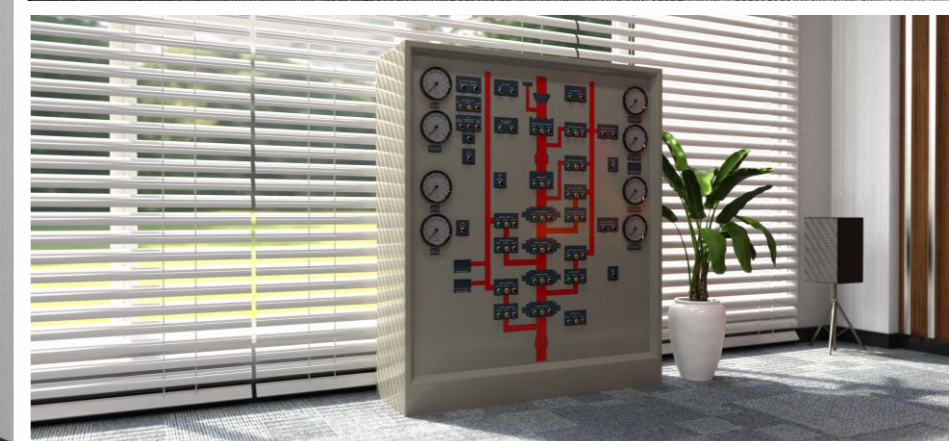
Hole shrinkage sticking

Fishing tap

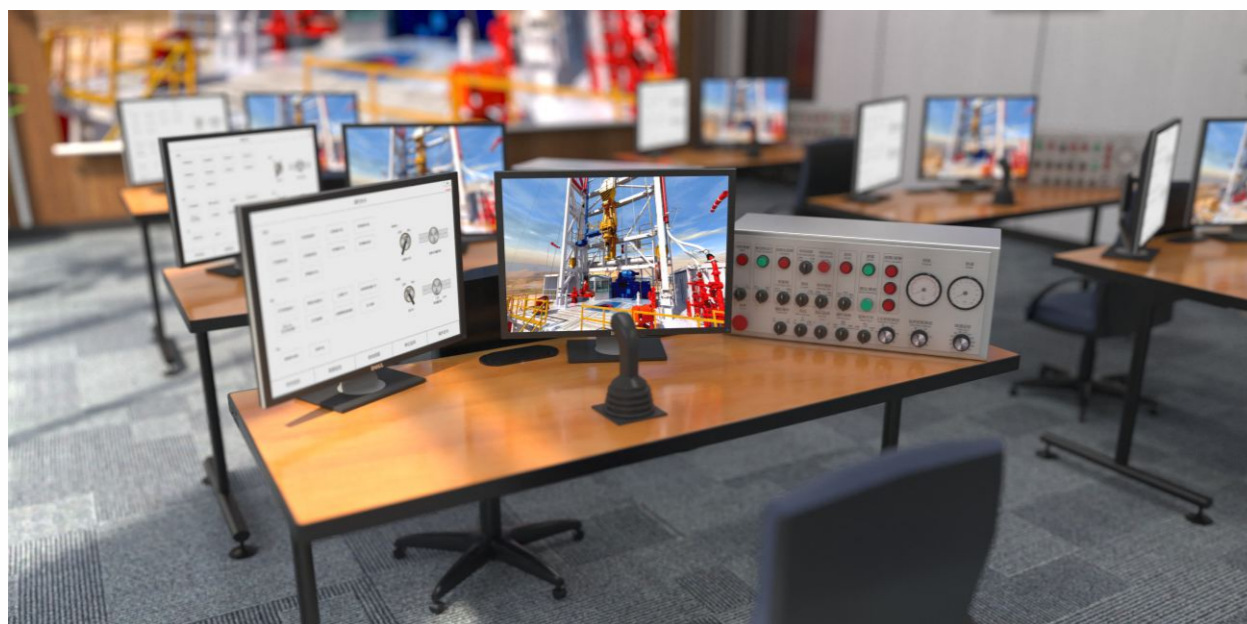
Junk milling

Drilling with bouncing bit

Drilling in leakage zone



## Top Drive Simulator



### Function

Top drive simulator is developed aiming for training the operation of top drive device. It can provide training items of all top drive operation and common accidents handling.

### Training Items

#### • 3D Animation Display of Top Drive Working Principle

Turret lock  
IBOP  
Top drive rotation  
Links tilting

#### • Non-sequence Operation Mode

Tripping in/out  
Drilling

#### • Step-by-step Working Mode

Tripping in/out  
Top drive making up/breaking out  
Normal drilling

#### • Problem Treatment

Resistance during tripping out  
Resistance during trippin in

## Land Rig Installation Simulator



### Function

Land rig installation simulator is the combination of petroleum engineering technology, computer technology and virtual reality technology. It is mainly used for training new workers, drillers, assistant driller, technicians, and driller supervisor, etc. The simulator can provide trainings as the land rig installing whole process and notes, land rig derrick and substructure raising and lowering, rig tripping in and out, drilling operation, top drive operation, rig construction, etc.

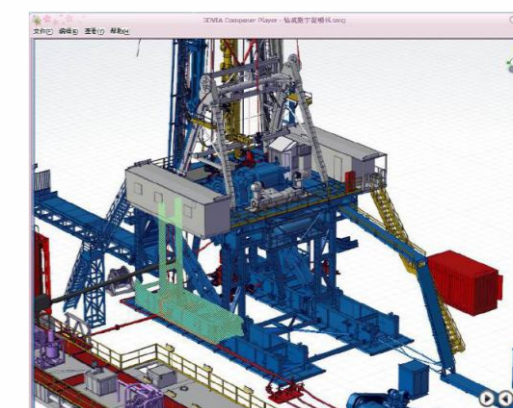
### Training Items

#### • Rig Installing Whole Process Training Operation

#### • Rig Installing Virtual Assembly Operation

#### • Raising and Lowering Operation

Derrick raising/lowering operation  
Substructure raising/lowering operation



# Downhole Operation

## Full Size Workover Simulator



### Function

Full size workover simulator can provide training for different posts such as driller, assistant driller, drilling crew technician, drilling supervisor, etc. The simulation training can enable trainees to master the skills of soft/hard shut-in, and conventional/unconventional well killing.

### Training Items

#### Primary Workers Operation

- Pulling and running tubing
- Sand washing
- Lead-mode printing



#### Intermediate Workers Operation

- Eccentric roller reshaping
- Fishing with releasing spear
- Fishing with slider spear
- Measuring stuck point



#### Senior Workers Operation

- TCP perforation
- Scraping after perforation



#### Shut-in Operation

With Drilling Platform (major workover)

- Shut-in after kick occurs in rotary operation
- Shut-in after kick occurs in running and pulling operation
- Shut-in after kick occurs in tripping large diameter tool operation
- Shut-in while out of hole
- Shut-in after kick occurs in wireline perforation operation

Without drilling platform (minor workover)

- Shut-in after kick occurs in rotary operation
- Shut-in after kick occurs in running and pulling operation
- Shut-in after kick occurs in tripping large diameter tool operation
- Shut-in while out of hole
- Shut-in after kick occurs in wireline perforation operation



#### Well Killing

- Driller's method of well killing
- Reverse circulation driller's method of well killing
- Engineer's method of well killing
- Reverse circulation engineer's method of well killing

#### Animation Display

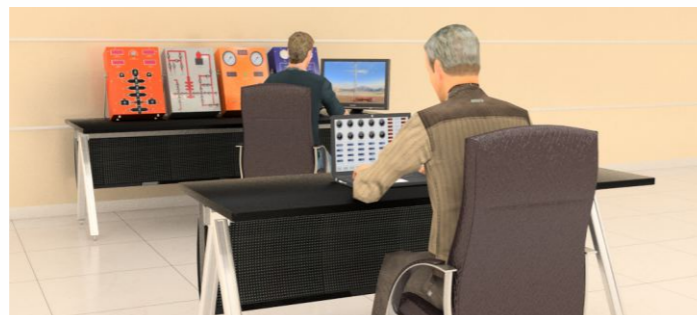
- Disassembling Christmas tree—install standpipe BOP
- Swabbing the well in
- Reverse circulation well killing
- Lowering gauge pressure testing
- Fracturing sand control
- Screw drill
- TCP-DST combination test
- Demonstration of toxic and harmful gases operation
- Demonstration of installation, inspection and operation of remote console



## Portable Workover Simulator

### Function

Portable workover simulator can provide training for different posts such as driller, assistant driller, drilling crew technician, drilling supervisor, etc. The simulation training can enable trainees to master the skills of soft/hard shut-in, and conventional/unconventional well killing.



### Training Items

#### Shut-in Operation (Major Workover)

- Shut-in after kick occurs in rotary operation
- Shut-in after kick occurs in running and pulling operation
- Shut-in after kick occurs in tripping large diameter tool operation
- Shut-in while out of hole
- Shut-in after kick occurs in wireline perforation operation



#### Without Drilling Platform (Minor Workover)

- Shut-in after kick occurs in rotary operation
- Shut-in after kick occurs in running and pulling operation
- Shut-in after kick occurs in tripping large diameter tool operation
- Shut-in while out of hole
- Shut-in after kick occurs in wireline perforation operation

#### Well Killing Operation

Driller's method

Reverse circulation driller's method

Engineer's method

Reverse circulation engineer's method

## Fracturing and Acidizing Simulator

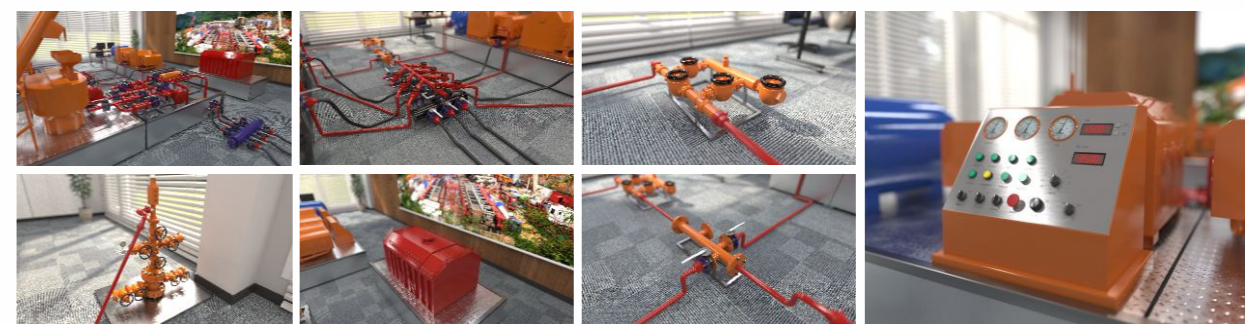
### Function

Fracturing and acidizing simulator can enable trainee to master the operational method of the devices, and learn the process of fracturing and acidizing and common treatment of fracturing accidents.



### Training Items

- Blender Truck Operation
- Fracturing Truck Local/Remote Control Operation
- Fracturing Devices Configuring/Connecting
- Fracturing String Configuring
- Fracturing Fluid/Proppant Volume Design
- Circulating Operation
- Pressure Testing Operation
- Pressure Testing Operation
- Fracturing Operation
- Adding Sand Operation
- Displacing Operation
- Conventional Fracturing Operation
- Sliding Sleeve Separated Fracturing Operation
- Ball Sealer/Wax Bead Selective Fracturing Operation
- Limited Entry Fracturing Operation
- Taking off Sand From End Fracturing Operation
- Staged Fracturing of Horizontal Well
- Staged Fracturing of Horizontal Well by Packer/ Pumping Bridge Plug
- Low Pressure Acid Displacement
- Setting Packer
- High Pressure Pump Injection
- Acid Fracturing Operation
- Acid Pickling Display
- Matrix Acidizing Display
- Standard Fracturing/Acidizing Display
- Process Display of Fracture Generating /Extension
- Fracturing Failure
- Fracturing from One Stratum to Another
- Sand Plugging
- String Falling off
- Pump Pressure Surge



# Well Intervention

## Full Size Coiled Tubing Simulator

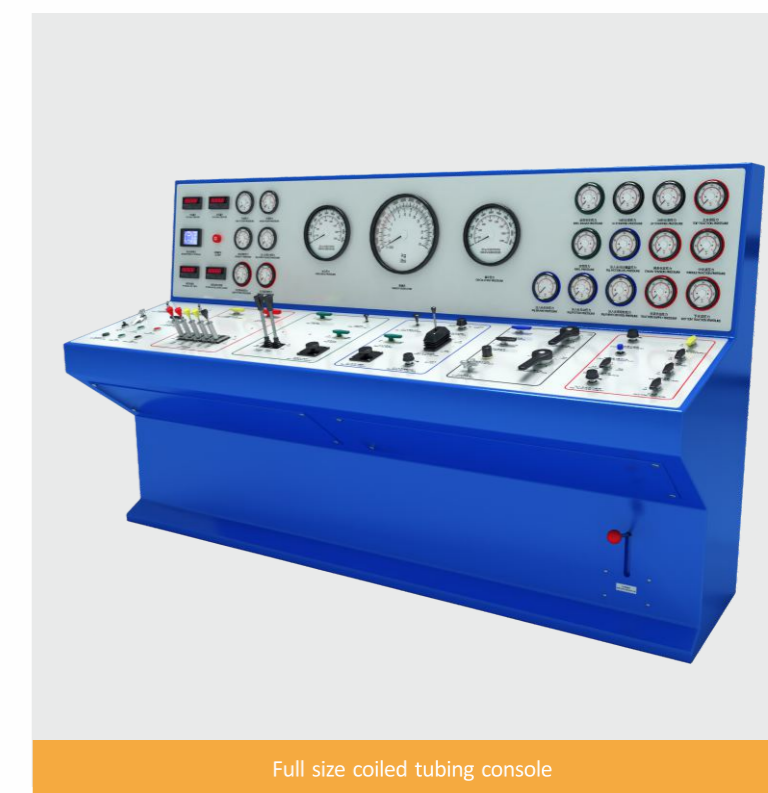
### Function

Full size coiled tubing simulator can provide the common downhole operation and accident treating training items such as drilling bridge plug, sand washing, gas-lift discharge, etc. Through the training with the simulator, trainees can master the basic operation of coiled tubing, common technology process of coiled tubing and common accidents and troubles treating in the process of coiled tubing.



### Training Items

- Pulling and Running Tubing
- Engine Control
- Reel Control
- Injector Control
- BOP Control
- Stripper Control
- Drilling Bridge Plug
- Sand Washing
- Gas Lift Discharging
- Switch on/off Sliding Sleeve
- Plug Fishing
- Judgement and Handle of Downhole Problems or Incidents
  - Coiled tubing leaking
  - Stripper leaking
  - Coiled tubing fracture
  - Coiled tubing collapse
  - Dynamic unit failure
  - Coiled tubing speed loss



Full size coiled tubing console

Coiled tubing stuck

- Well Control
  - Driller's method
  - Engineer's method

- Fatigue Life Analysis

## o Portable Coiled Tubing Simulator

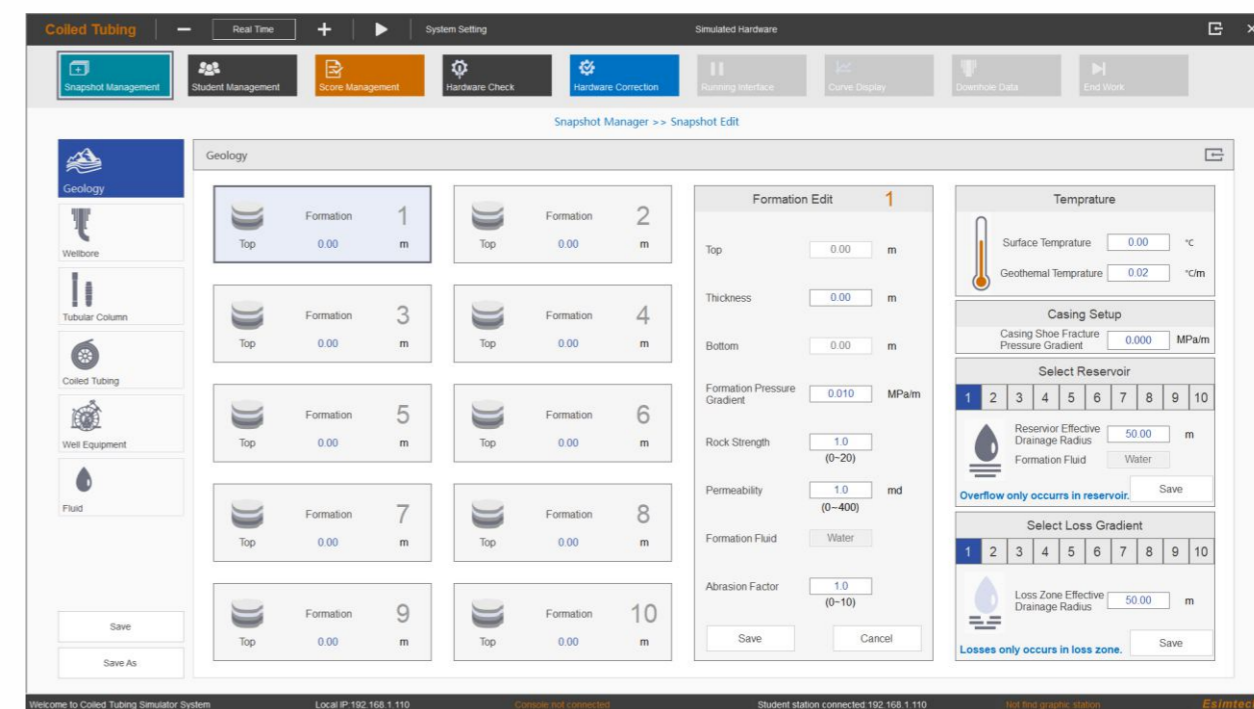
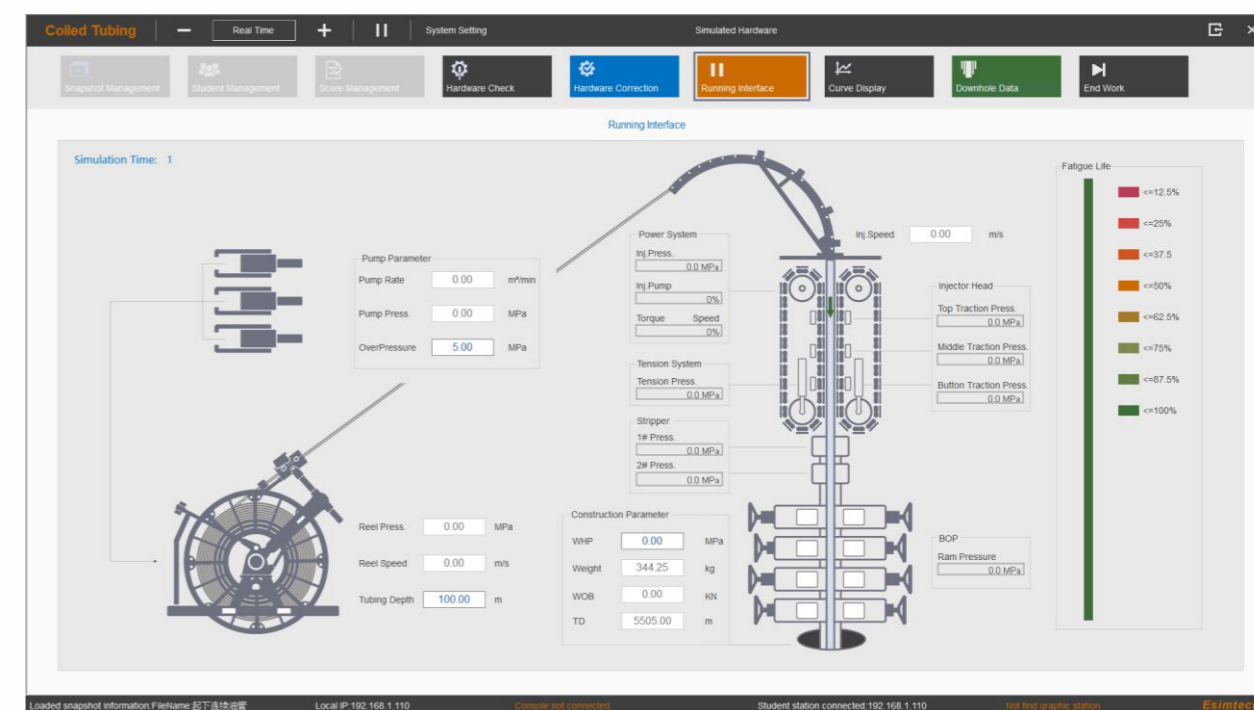


### Function

Portable coiled tubing simulator is mainly used to train new staff, coiled tubing operator, coiled tubing operation team leader, etc. Through the training of this system, trainees are able to master the basic method of operating coiled tubing, common technology process of coiled tubing operation, common trouble and problems treatment, etc.

### Training Items

- Pulling and Running Tubing
- Engine Control
- Reel Control
- Injector Control
- BOP Control
- Stripper Control
- Drilling Bridge Plug



## Full Size Snubbing Simulator



### Function

Full size snubbing simulator can simulate the operations such as running and pulling tubing and other tools with pressure, and can present the operation and motion of key tools in snubbing operation. Through the training provided by this simulator, trainees can master the basic methods of snubbing driller operation and the technological process of snubbing operation.

### Training Items

- **Calculating Balance Point and Unsupported Length**

Pulling and running below low-pressure balance point  
Running and pulling string above 21MPa  
Running and pulling string in barren hole

- **Pulling and Running Tubing**

Pulling and running above high-pressure balance point  
Pulling and running below high-pressure balance point  
Pulling and running above low-pressure balance point

- **Pulling and Running Fittings**

Pulling tubing hanger  
Setting tubing hanger  
Running and pulling packer

## Portable Snubbing Simulator

### Function

Portable snubbing simulator can simulate the operations such as running and pulling tubing and other tools with pressure, and can present the operation and motion of key tools in snubbing operation. Through the training provided by this simulator, trainees can master the basic methods of snubbing driller operation and the technological process of snubbing operation.



### Training Items

- **Calculating Balance Point and Unsupported Length**

- **Pulling and Running Tubing**

Pulling and running above high-pressure balance point  
Pulling and running above low-pressure balance point  
Pulling and running below high-pressure balance point  
Pulling and running below low-pressure balance point

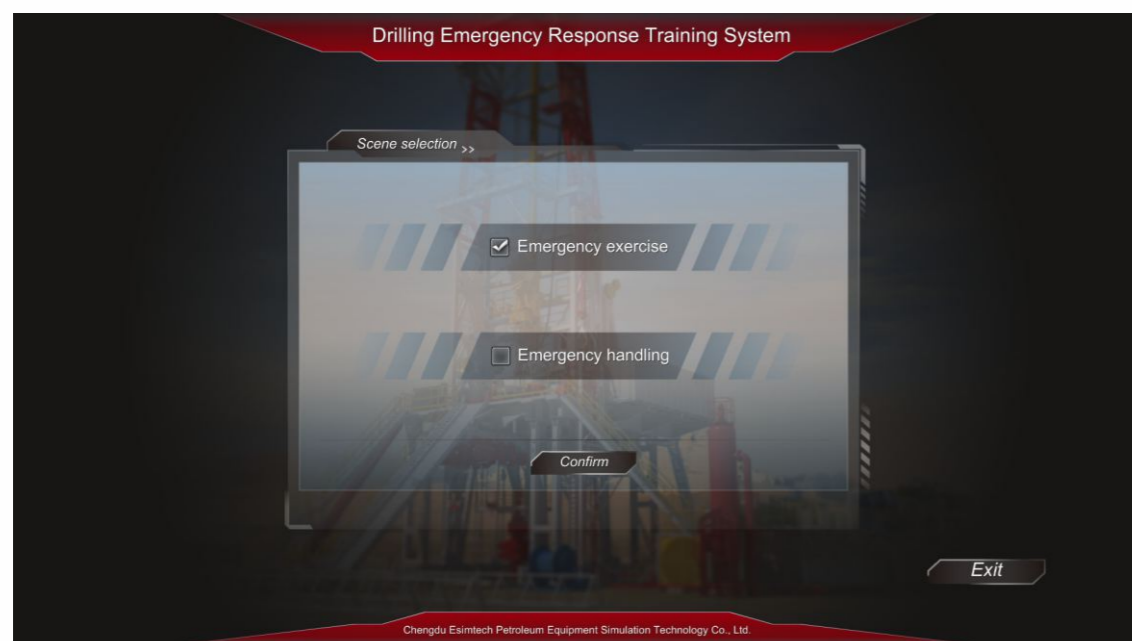
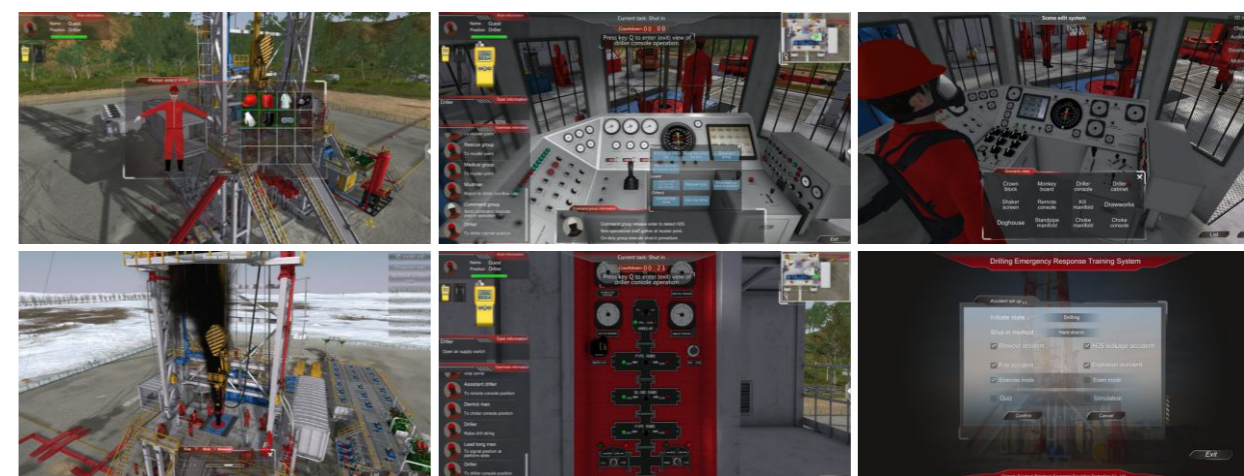


# Emergency Exercise

## Drilling Emergency Exercise Software Platform

### Function

Drilling emergency exercise software platform is a set of software for drilling practitioners to improve their capability of emergency management and it can be used for training and assessment of emergency exercise. This system, taking the emergency disposal of typical accidents in drilling operation as the core and based on the emergency plan for drilling emergencies, simulates the process of drilling emergency exercise, receives the emergency handling operation of the trainee, and judges the personnel's disposal operation according to the emergency plan. Through the system, the trainees can correctly pre-judge the on-site situation, participate in the training of emergency handling and emergency escape in the face of drilling accidents, thereby improving the personnel's emergency response capability.



### Training Items

#### • Out-of-control Blowout

- Drilling (soft/hard shut-in)
- Tripping pipe (soft/hard shut-in)
- Tripping collar (soft/hard shut-in)
- Barren hole operation (soft/hard shut-in)

#### • Hydrogen-Sulfide Leakage and Toxicosis

- Drilling (soft/hard shut-in)
- Tripping pipe (soft/hard shut-in)
- Tripping collar (soft/hard shut-in)
- Barren hole operation (soft/hard shut-in)

#### • Fire and Explosion

- Drilling (soft/hard shut-in)
- Tripping pipe (soft/hard shut-in)
- Tripping collar (soft/hard shut-in)
- Barren hole operation (soft/hard shut-in)

#### • Comprehensive Exercise

- Drilling (soft/hard shut-in)
- Tripping pipe (soft/hard shut-in)
- Tripping collar (soft/hard shut-in)
- Barren hole operation (soft/hard shut-in)

#### • Knowledge and Skill of Emergency Handling

- Fire
- Electric shock
- Mechanical injury
- Self and mutual medical aid

## Drilling Emergency Practice Platform

### Function

This is the first petroleum emergency practice training platform combining the technologies of "Internet of Thing" and "Internet plus". The system is setup on a real drilling platform, making up a vivid and stunning simulation scene on the premise of safety securing. It provides the best exercise experience for trainees, and create a fixed impression of emergency handling on their mind.



### Training Items

#### • Out-of-control Blowout

- Drilling (soft/hard shut-in)
- Tripping pipe (soft/hard shut-in)
- Tripping collar (soft/hard shut-in)
- Barren hole operation (soft/hard shut-in)

#### • Fire and Explosion

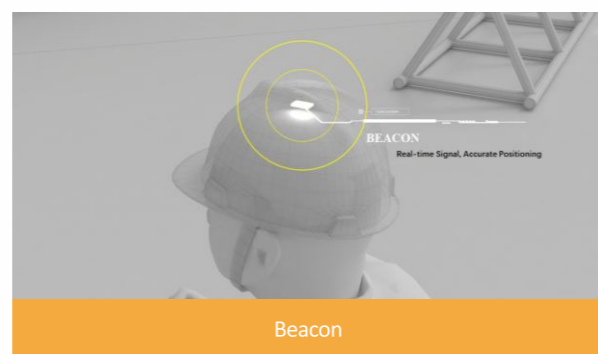
- Drilling (soft/hard shut-in)
- Tripping pipe (soft/hard shut-in)
- Tripping collar (soft/hard shut-in)
- Barren hole operation (soft/hard shut-in)

#### • Hydrogen-Sulfide Leakage and Toxicosis

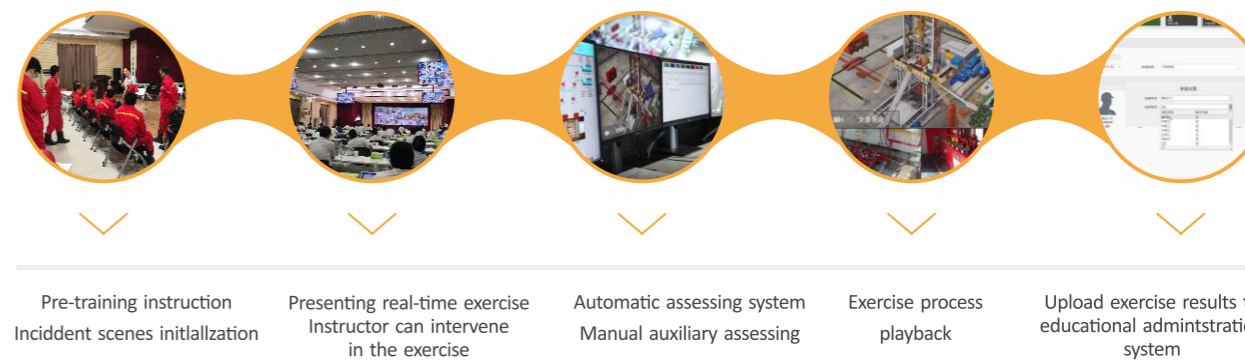
- Drilling (soft/hard shut-in)
- Tripping pipe (soft/hard shut-in)
- Tripping collar (soft/hard shut-in)
- Barren hole operation (soft/hard shut-in)

#### • Knowledge and Skill of Emergency Handling

- Fire
- Electric shock
- Mechanical injury
- Self and mutual medical aid



### • Practice Procedure



# Production and Transportation

## Oil Recovery Simulator

### Function

It can provide training for primary workers, intermediate workers, senior workers, technicians, senior technicians, etc. The training provided by this system make the students master theories of various oil recovery devices and usage, as well as the method of treating common accidents.



### Training Items

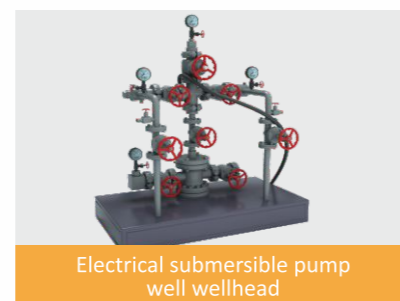
- Rod-pumped well opening /shutting in
- Electric submersible pump well washing
- Checking pump condition by building pressure of screw pump well
- Single well gauging operation
- Water injection positive /inverse injection
- Building pressure of rod-pumped well wellhead
- Rod-pumped well washing
- Screw pump well opening /shutting in
- Wellhead fault judging and removing
- Washing gauging and separating device
- Water injection process fault judging and removing
- Electric submersible well opening/shutting in
- Screw pump well washing
- Starting furnace operation
- Gauging station fault judging and removing
- Adjusting water injection volume



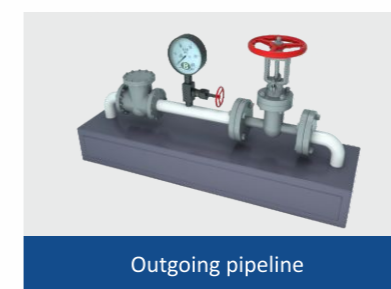
Pumping unit



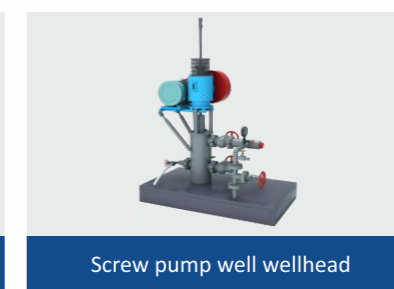
Pumping well wellhead



Electrical submersible pump well wellhead



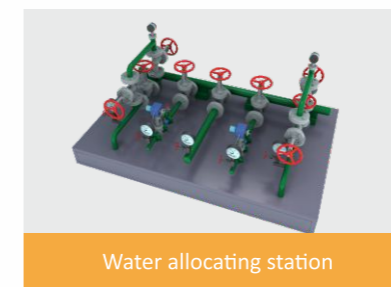
Outgoing pipeline



Screw pump well wellhead



Gauging separator



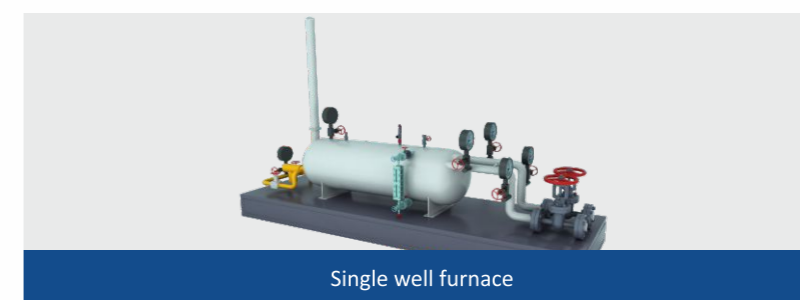
Water allocating station



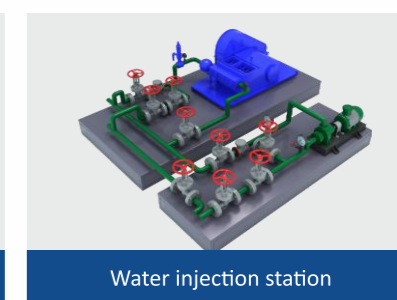
Water jacket furnace



Electrical submersible pump controlling cabinet



Single well furnace



Water injection station



Incoming manifold



Water injection well#1



Water injection well#2

## Gas Production Simulator



### Function

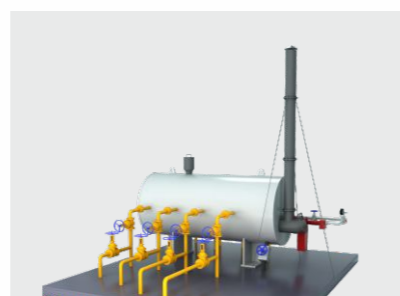
Gas production simulator can enable trainees to master the inner structure of various gas production equipment and its working theories, typical stations and process. It provides various layers of training, which satisfies the training requirement of primary workers, intermediate workers, senior workers, technicians and senior technicians. The training provided by this system makes students master the theories of various gas production devices and usage, as well as the method of treating common accidents.



Standard flowing well



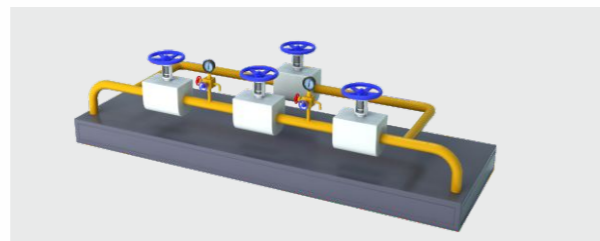
Simple flowing well



Water jacket furnace



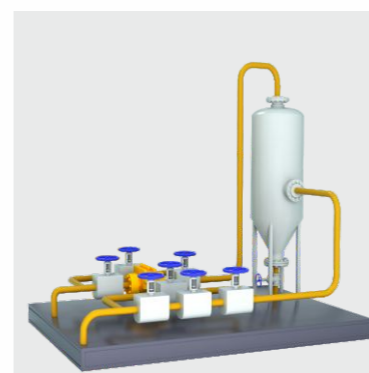
Methanol loading arm



2<sup>nd</sup> throttling area

### Training Items

- Flowing well startup and shutting in
- Electrical submersible pump dewatering startup and shutting in
- Injecting anti-freezer
- Starting and shut down furnace
- Natural gas dehydrating operation
- Plunger pump dewatering well startup and shutting in
- Treatment of natural gas leaking
- Natural gas venting operation
- Gas well single well metering
- Pig receiving and launching operation



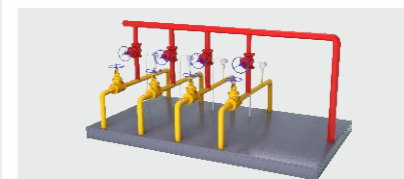
Water separator and gas storage unit



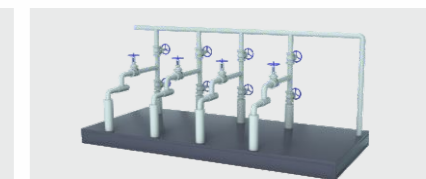
Outgoing valves



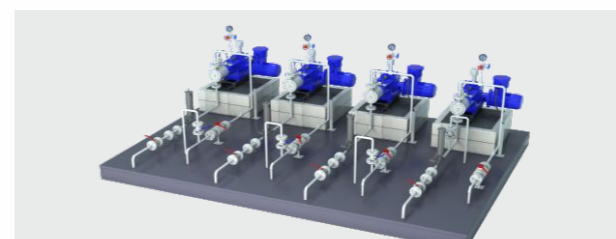
Metering separator



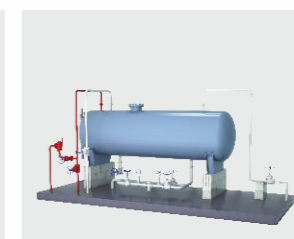
High pressure incoming area



1<sup>st</sup> throttling area



Methanol pump



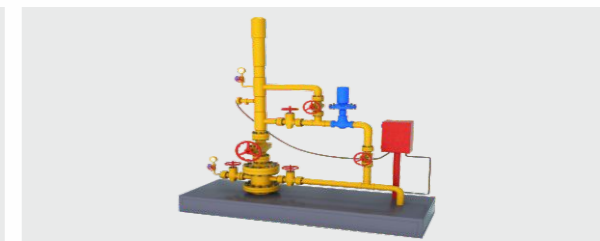
Methanol storage tank



Production separator



Plunger dewater gas production well#1



Plunger dewater gas production well#2

## Oil and Gas Gathering and Transportation Simulator

### Function

Oil and gas gathering and transportation simulator can enable trainees to master the inner structure and working theories of the devices, learn the typical stations and process of this section. Through the training and test of this system, students can master the working theories and usage of various devices and can treat the common problem well.



### Training Items

#### • Natural Gas Boosting and Distribution Simulation

Distribution process

Boosting process

Trans-station process

Pig receiving and launching

#### • Crude Oil Long-Distance Transportation

Initial station process

Intermediate station closed transportation process

Intermediate station tank to tank process

Final station process

#### • Joint Station

Crude oil processing

Waste water process procedure

Water injection procedure

#### • LNG Receiving Station

Discharging

LNG vaporizing/transporting

LNG flash distillation

Circulating in tank

#### • Refined Oil Depot

Railway loading and unloading

Automobile loading and unloading

Water route loading and unloading

Switching operation

# Well Logging

## Openhole Well Logging Simulator

### Function

Openhole logging simulator can display the structure and working principle of logging devices, and the whole process from logging preparation to the end. The system can complete the training and testing of logging operation for logging technicians.



### Training Items

#### • Wellhead Worker

- Wellhead equipment installation
- Bridle making
- Connecting logging tool/cable
- Cut-threak freeing and fishing
- Equipment dismantling

#### • Winchman

- Raising normally
- Lowering normally
- Lowering and stuck
- Raising and sticking



#### • Surface Unit Operator

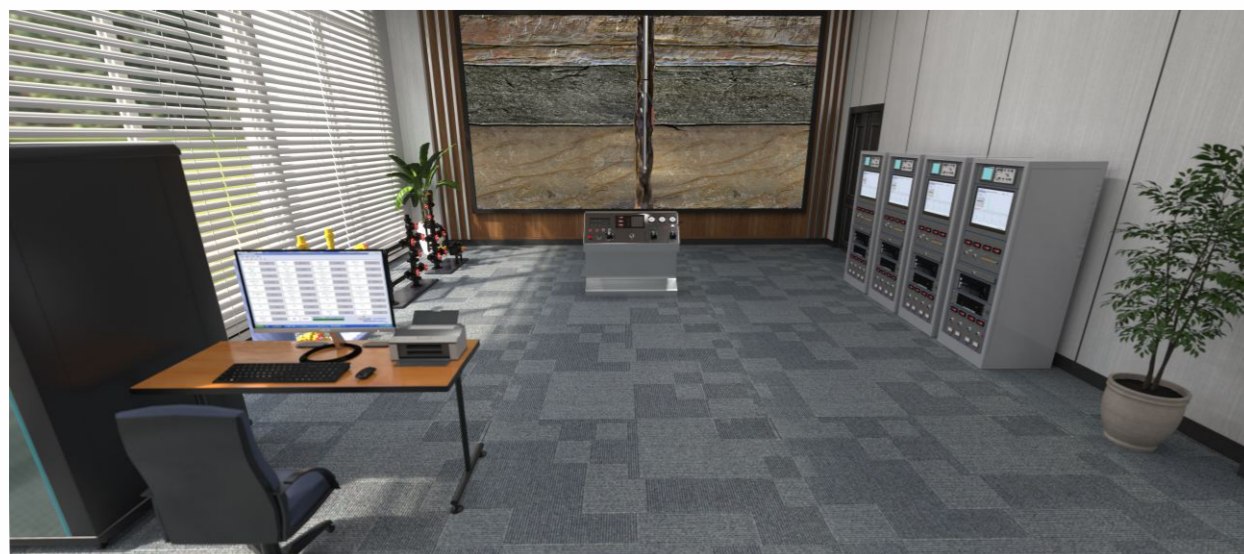
- Spontaneous potential logging
- Conventional resistivity logging
- Lateral logging
- Microresistivity logging
- Induced well-logging
- Acoustic logging
- Gamma-ray logging
- Density logging
- Neutron logging
- Openhole diameter logging

#### • Animation

- Spontaneous potential logging
- Conventional resistivity logging
- Lateral logging
- Microresistivity logging
- Induced well-logging
- Acoustic logging
- Gamma-ray logging
- Density logging
- Neutron logging
- Openhole diameter logging

- Introduction to basic logging material
- Maintenance of logging wellhead equipment
- Technology of openhole logging and horizontal well logging
- Technology of cable perforation
- Technology of tubing conveyed perforation
- Working principle and maintenance of basic downhole logging tools
- Basic operation and maintenance of surface unit
- Making and maintenance of bridle

## Production Well Logging Simulator



### Function

Production well test simulation training system takes the advantage of computer simulation and virtual reality, network technology, graphics technical, multi-media technical and well logging theory to solve the problem of pre-post training and skill evaluation of well logging technicians and workers and make training and evaluation keep step with the technology development and production demand.

### Training Items

#### • Wellhead Workers Operation Training

Tubing injecting operation with/without test valve at wellhead  
Casing injecting operation with/without test valve at wellhead  
Pumping operation with/without test valve at wellhead

#### • Drawworks Worker Operation Training

Normal lowering/raising  
Lowering/Raising with obstacle

#### • Operator Operating Training

Five-parameter combination logging

Electromagnetism flow logging  
Oxygen activation logging  
Impedance logging  
Audio logging  
Caliper logging  
Single magnetic locating logging  
Former magnetic locating logging  
Acoustic logging

#### • 3D Animation of Well Logging

#### • Theoretical Training and Online Examining of Well Logging

## Compound Logging Simulator

### Function

Compound logging simulator adopts full size logging equipment room, sand table well site model, sensor models, advanced logging software, drilling accidents modeling software and sensor detecting software designed by Esimtech. It presents the whole process of compound logging. Through the training of this system, trainees can master various operation skills and experience of treating drilling accidents.



### Training Items

#### • Tripping in

Lost circulation when tripping out	Oil or water immersion when tripping in	Lost circulation when tripping in
Kick occurs when tripping out	Lost circulation when tripping in	Stuck pipe when tripping in
Blowout when tripping out	Kick when tripping in	Drill pipe broken
Getting stuck when tripping out	Raising and unfreezing	Nozzle plugged
Raising and unfreezing	Oil or water immersion when tripping in	Abnormal standpipe pressure

#### • Monitoring Circulation and Static State

Lost circulation	Influx	Blowout
Oil or water immersion	Kick	

#### • Incidents When Drilling and Reaming

Bit service life end	Drill pipe not well braked	Standpipe pressure changing because of drilling fluid density
Lost cone	Percussion drilling	Pump leaking
Bit worn out	Emptying	Pump leaking
Drilling string leaking/broken	Nozzle plugged	Pump water feeding failure
Lost circulation	Lost nozzle	Bypass valve broken
Gas/brine immersion	Bit balled up	High pressure pipe leaking
Kick	Stuck pipe	
Influx	Wall collapse	

#### • H2S Detection

Formation H2S	Non-formation H2S
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#### • Monitoring Formation Pressure

#### • Damper Failure

# Virtual Reality (VR)

## Device Virtual Assembly

### Function

Through the immersive experience by virtual reality, trainees can targetedly learn the inside structure, working principle and assembly method of drilling and well control device. As a result, trainees can get familiar with the device components and principle, and are able to analyze the working condition and remove fault.

### Feature

Provide customized services, including but not limited to the displayed items.



Virtual Assembly

## Emergency Exercise (VR)

### Function

Emergency exercise (VR) is developed based on emergency exercise software platform, used to train and test drilling emergency exercise. Through VR interactive and immersive experience, trainees can cultivate their mental quality in front of an incident. Through the training and test of this system, trainees can complete the training of pre-judge drilling emergency, handle an emergency and emergency escape.

### Feature

#### • Out-of-control Blowout

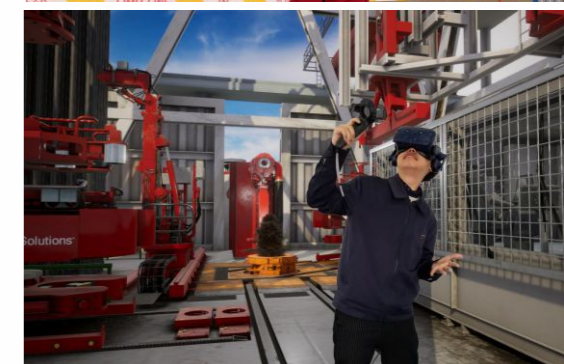
- Drilling (soft/hard shut-in)
- Tripping pipe (soft/hard shut-in)
- Tripping collar (soft/hard shut-in)
- Barren hole operation (soft/hard shut-in)

#### • Hydrogen-Sulfide Leakage and Toxicosis

- Drilling (soft/hard shut-in)
- Tripping pipe (soft/hard shut-in)
- Tripping collar (soft/hard shut-in)
- Barren hole operation (soft/hard shut-in)

#### • Fire and Explosion

- Drilling (soft/hard shut-in)
- Tripping pipe (soft/hard shut-in)
- Tripping collar (soft/hard shut-in)
- Barren hole operation (soft/hard shut-in)



#### • Comprehensive Exercise

- Drilling (soft/hard shut-in)
- Tripping pipe (soft/hard shut-in)
- Tripping collar (soft/hard shut-in)
- Barren hole operation (soft/hard shut-in)

#### • Knowledge and Skill of Emergency Handling

- Fire
- Electric shock
- Mechanical injury
- Self and mutual medical aid



## ○ Snubbing Simulator (MR)

### Function

Snubbing simulator (MR) combines the full-size drilling snubbing simulator with VR technology. Combination of virtual and reality training environment enables trainees to completed the training items such as running and pulling tubing, tools, etc. and master the basic snubbing operation and common snubbing technology process.



### Training Items

- **Calculating Balance Point and Unsupported Length**
- **Pulling and Running Tubing**

Pulling and running above high-pressure balance point  
 Pulling and running below high-pressure balance point  
 Pulling and running above low-pressure balance point  
 Pulling and running below low-pressure balance point

Running and pulling string above 21MPa  
 Running and pulling string in barren hole

- **Pulling and Running Fittings**

Pulling tubing hanger  
 Setting tubing hanger  
 Running and pulling packer



# Industrial Animation

## Function

Industrial animation can specifically display the internal structure, working principle and disassembly process of drilling and well control devices and tools. It can help trainees to get familiar with the composition and principle of devices, master the skills of inspecting and debugging, learn to analyze and judge working condition to troubleshoot timely.

## Feature

Provide customized services, including but not limited to the displayed items.

