SAQCC FIRE

D&GS TRAINING SUB COMMITTEE

COURSE CURRICULUM

COURSE	Gas Supplier Training 2 Inert clean agent gas systems	
ORIGINATOR	Laura Swart	
DATE	23rd September 2013	
Amendment 1	5th October 2013	1st draft changes
Amendment 2	21st November 2013	2nd draft amendments
Issued	15th December 2013	Issued

EQUIVALENT TRAINING COURSES AVAILABLE		
TITLE	TRAINING SCHOOL	CONTACT DETAILS
Inergen training	Red G	011 708 0160
Inergen Training	FST	012 621 9400

STATUS OF CURRICULUM - - Complete - Issued

EQUIVALENT UNIT STANDARD	

None

PURPOSE OF TRAINING COURSE

This training course is for learners to gain knowledge of Inert clean agent gas suppression systems which includes; agent properties, system components, correct installation, commissioning and maintenance.

Learners who complete this course will obtain detailed knowledge of how to assess, install, commission and maintain these systems.

LEARNING ASSUMED TO BE IN PLACE

This course assumes the learner has already proved competent in:
Fire theory
Safe workshop practice
Pipe threading and Installation of high pressure piping

OUTCOMES REQUIRED

Topics Covered:

1. The agents
2. Components of an Inert clean agent gas system
3. Hazards of gas systems
4. System design
5. Installation of gas systems
6. Completion procedures
7. Operating and maintaining gas systems

Outcome 1: The gaseous agent

Learning Outcomes:

To include:

- The agent composition
- Approved usage and limitations
- Safety factors: people, environment and equipment
- Typical applications
- Applicable approvals
- The agent extinguishing operation – mechanism of suppression
- Safe exposure levels

Assessment:

Learner to describe the composition and approvals of the fire systems and all the extinguishing operation and safety parameters of the agent

Outcome 2: Components of an Inert clean agent gas system

Learning Outcomes:

To include:

- The storage vessel
- The agent
- The manifold and piping
- Bracketing
- Safety cap
- Valve: Over pressurisation burst disc, actuation ports, filling ports, low pressure switch connections, valve operation,

- The actuation equipment and operation; electrical, manual and pneumatic, plus actuation components (plus explosion proof)
- Multiple container actuation
- Discharge hoses
- Manifold check valve
- Discharge pressure switch
- Pressure restrictors
- Discharge nozzles
- Nozzle deflector shields
- Warning signs
- Vents for closed pipe systems

Assessment:
Learner to demonstrate knowledge and use of all components

Outcome 3: Hazard analysis of Inert gas systems.

Learning Outcomes:

To include :
- Total flooding
- Design standards and other requirements
- Hazard conditions
- Types of fires
- Hazard dimensions and additional volume factors to be considered
- Ceiling obstructions

Assessment:
Learner to demonstrate his knowledge of a full hazard analysis prior to installation

Outcome 4: System design

Learning Outcomes:

To include:
- Appropriate design standard
- Agent flow characteristics
- Pressures of the gas system
- Hazard information to be determined
- Design steps
- Design concentration and quantity of required agent
- Altitude correction factor
- System design example
- Design concentration check – personal safety

- Tank selection / fill density
- Nozzle design and location
- Piping network rules
- Pipe and nozzle size estimation
- Venting of closed pipe systems

Assessment
Learner to complete a basic gas design.

Outcome 5: Installation of an Inert clean agent gas system

Learning Outcomes:

To include:
- Safety basics
- Container Installation
- Piping and Nozzles
- Actuation Controls
- Ancillary Equipment

Assessment:
Learner to describe how to test and commission the system and demonstrate ability to find faults on the system.

Outcome 6: Completion procedures.

Learning Outcomes:

To include:
- Pre checks and visual inspections
- Electrical checks, pneumatic checks
- General mechanical checks
- Final connections
- Pressure venting
- Room Integrity testing

Assessment:
Learner to describe the final check procedure

Outcome 7: System operation and maintenance.

Learning Outcomes:

To include:

- Handover instructions to end user
- Handover documentation requirements
- Service intervals and requirements

Assessment:

Learner to describe the handover and maintenance requirements