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AIDS HELPLINE: 0800-0123-22 Prevention is the cure

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GOVERNMENT NOTICE

DEPARTMENT OF LABOUR

No. R. 1088

17 September 2004

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO. 85 OF 1993)

NOTICE OF DRAFT AMENDMENT

PRESSURE EQUIPMENT REGULATIONS

The Minister of Labour intends, in terms of section 43 of the Occupational Health and Safety Act, 1993 on the recommendation of the Advisory Council for Occupational Health and Safety to repeal the Vessel under Pressure Regulations, 1996 and supersede it by wording in accordance with the Schedule.

Interested persons are invited to submit any substantiated comments or representations on the proposed regulations to the Director General of Labour, Private Bag X117, Pretoria, 0001 (for the attention of the chief inspector: Occupational Health and Safety), within 60 days of the date of publication of this notice.

SCHEDULE

REGULATION 1

DEFINITIONS

1. In these regulations,

“**Act, the**” means the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)

“**Annexure**” means an annexure to these regulations;

“**authorised person**” means a person who is registered as a competent person within their scope of work;

“**certificate of conformity**” means a certificate for a gas installation in the form of annexure 1 and issued by an authorised person;

“dangerous substance” means a substance as defined and classified in terms of SANS 10229;

“design pressure” means the pressure used in the design formulae to determine the dimensions of the component parts of the pressure equipment;

“design temperature” means the temperature used in the design formulae to determine the dimensions of the component parts of the pressure equipment

“design verification” means verification that the pressure equipment complies with the applied design standard and the requirements of these regulations;

“fire extinguisher” means a rechargeable container which has a fire extinguishing substance that is expelled by the action of internal pressure for the purposes of extinguishing a fire;

“fluid” means any liquid, including steam and may contain solids in suspension;

“gas” means gases, liquefied gases, gases dissolved under pressure, vapours, and those liquids whose vapour pressure at the design temperature is greater than 50 kPa above normal atmospheric pressure;

“gas fuel” means any liquefied petroleum gas, coal produced gas, natural gas, hydrogen gas, acetylene gas, methane gas or a mixture thereof;

“gas fuel system” means an assembly of tubes, pipes or similar ducts, fittings and valves for the process and conveyance of a gas fuel, excluding a vessel or portable gas container connected to the system;

“latent defect” means a fault inherent in pressure equipment, resulting from deficiencies in the design or manufacturing process that may cause a health and safety risk.

“manufacturer” means any person who designs and manufactures, revalidates, modifies or repairs any pressure equipment for use; and “authorised representative”, “modifier” and “repairer” have a corresponding meaning;

“modification” means any change to the original design conditions of pressure equipment, including re-rating, the addition or removal of elements that could affect the integrity of the pressure equipment, and “modify” has a corresponding meaning;

“non-corrosive” means a corrosion rate that would not cause complete loss of the available corrosion allowance over a period of at least 20 years and is only applicable for intended service conditions of general corrosion or uniform wastage;

“non-metallic” means glass, thermoplastic or thermosetting polymeric reinforced and un-reinforced materials or combinations thereof;

“pipeline” means piping or a system of piping designed for the transport and distribution of any fluid, gas or substance to or from an installation (onshore or offshore) starting from and including the last isolation device located within the confines of the installation, including all the auxiliary equipment designed specifically for the pipeline.

“piping” means piping, tubing or flexible pressure hose elements intended for the transport or distribution of fluids or gas under pressure or any dangerous substances, when connected together for integration into a system;

“pressure equipment” means steam generator, vessel, piping, pressure accessory and safety accessory and includes, but not limited to accumulator, transportable gas container, fire extinguisher and hyperbaric chambers;

“pressure accessory” means apparatus with an operational function to measure, control, or record pressure within pressure equipment;

“re-certification” means the activities under taken to issue a “certificate of conformity” for any pressure equipment for which no certificate of manufacture, issued by the original manufacturer, can be produced;

“repair” means the application of heat or welding to any pressure equipment, or the replacement of expanded tubes, for non-metallic equipment repair means the application of heat, welding, solvent cement, laminate or curing of thermoset and 'repairing' has a corresponding meaning.

“safety accessory” means devices designed to protect the pressure equipment;

“sound engineering practice” means the application of design principles and generally accepted technical knowledge available: Provided that the pressure equipment is delivered with instructions for use to ensure that the pressure equipment is safe and without risks to health when properly used;

“steam” means water vapour at a pressure equal to or greater than atmospheric pressure and a liquid at a temperature equal to or greater than its boiling temperature at atmospheric pressure;

“steam generator” means any apparatus to convert continuously any liquid into steam vapour or gas at a pressure higher than that due to the atmosphere and where the heat is derived from a source other than steam or the ambient temperature of the atmosphere, and includes any superheater or economiser which is an integral part of a steam generator or is separately fired therefrom: Provided that fired steam and hot-water boilers, waste-heat boilers, waste incineration boilers, electrode or immersion-type electrically heated boilers shall have a corresponding meaning;

“transportable gas container” means any refillable vessel for the storage and conveyance of liquefied, dissolved or compressed gases, of water capacity from 0,5 litre to 3000 litre;

“vessel” means a housing designed and manufactured to contain fluids or gas under a design pressure equal to or greater than 50 kPa or contains any dangerous substances;

REGULATION 2

SCOPE OF APPLICATION

2.(1) These regulations shall apply to the design, manufacture, operation, repair, modification, maintenance, inspection and testing of—

- (a) all pressure equipment with a design pressure equal to or greater than 50kPa and as further categorised under a health and safety standard incorporated into these regulations in terms of section 44 of the Act;
 - (b) vessels for human occupancy;
 - (c) pressure equipment with a design pressure less than 50kPa containing a fluid of a dangerous substance; and
 - (d) pressure equipment of uncontrolled heating of a substance to its flash point that is within the ambient range of temperature. (e.g. paraffin flash point is $\pm 43^{\circ}\text{C}$ Ambient temperature can reach 43°C).
- (2) Pressure equipment in use prior to the publication of these regulations shall have been designed, constructed and manufactured according to the requirements applicable at that time of manufacturing.
- (3) The following pressure equipment are excluded from these regulations—
- (a) piping networks for the supply, distribution and discharge of water below its boiling point at atmospheric pressure and associated pressure equipment and headraces such as penstocks, pressure tunnels, pressure shafts for hydro-electric installations and their related specific pressure accessories: Provided this shall not apply to pressure equipment as defined;
 - (b) aerosol dispensers;
 - (c) pressure equipment intended for the functioning of road and rail vehicles;
 - (d) pressure equipment covered under the scope of any license issued by the National Nuclear Regulator Act, 1999 (Act No. 47 of 1999);
 - (e) pressure equipment comprising casings or machinery where the dimensioning, choice of material and manufacturing rules are based primarily on requirements for sufficient strength, rigidity and stability to meet the static and dynamic operational effects or other operational

characteristics and for which pressure is not a significant design factor. Such pressure equipment may include—

- (i) engines including turbines and internal combustion engines;
- (ii) steam engines, gas/steam turbines, turbo-generators, compressors, pumps and actuating devices;
- (f) open metal making pots and blast furnaces including the furnace cooling system, hot-blast recuperators, dust extractors, blast-furnace and direct reducing cupolas, including the furnace cooling, gas converters and pans for melting, re-melting, de-gassing and casting;
- (g) pressure equipment as defined, attached to electrical machinery for its function and operation, such as switchgear, control gear, transformers, and rotating machines;
- (h) tyres, and flexible pressurised casings used for recreational purposes;
- (i) a vessel in which the pressure is exerted by a non-dangerous liquid the temperature of which does not exceed the boiling point of the liquid at atmospheric pressure and in which a cushion of gas or vapour cannot form above the liquid, including radiators and pipes in warm water heating systems;

REGULATION 3

GENERAL REQUIREMENTS

3. Any person, who manufactures, imports, sells, offers, or supplies any pressure equipment described under these regulations shall ensure that it complies with these regulations.

REGULATION 4

DUTIES OF MANUFACTURERS

- 4.(1) Subject to the requirements set out in the health and safety standard incorporated into these regulations in terms of section 44 of the Act, the manufacturer shall –
 - (a) ensure, as far as is reasonably practicable, that the pressure equipment as manufactured, modified or repaired is safe and without risks to health when properly used;

- (b) ensure that the interventions of the inspection authority are applied as set out in a health and safety standard incorporated into these regulations in terms of section 44 of the Act;
 - (c) be responsible that pressure equipment is correctly categorised, designed and manufactured in accordance with a health and safety standard incorporated into these regulations in terms of section 44 of the Act;
 - (d) ensure that any pressure equipment is manufactured in accordance to the relevant hazard category in accordance with a health and safety standard incorporated into these regulations in terms of section 44 of the Act.
 - (e) issue a written certificate of conformity for all pressure equipment supplied, including certification by the inspection authority as required in sub-regulation (3). Further, for imported pressure equipment a certificate verifying compliance to these regulations shall also be issued by the importer or manufacturer's representative;
 - (f) comply with any other responsibilities assigned to the manufacturer in these regulations;
- (2) Any person who erects or installs any pressure equipment for use shall ensure, as far as is reasonably practicable, that it is erected or installed in a safe manner and without risk to health and safety when properly used.
- (3) Where the manufacturer has received a report of or is aware of a possible latent defect to any pressure equipment, the manufacturer shall investigate whether a latent defect exists. If a latent defect exists then the manufacturer shall –
- (a) stop the manufacture and supply of the pressure equipment until the defect is corrected, and
 - (b) advise users of that pressure equipment of any corrective measures that shall be taken.
- (4) A manufacturer who determines that pressure equipment has a latent defect shall advise the chief inspector thereof and what measures are being taken to correct the defect.

REGULATION 5

DUTIES OF IMPORTERS/SUPPLIERS

- 5.(1) Importers and suppliers shall ensure that pressure equipment placed on the market complies with the requirements of these regulations prior to custom and excise duty clearance.
- (2) Where the importer or suppliers has received a report of or is aware of a possible latent defect the importer shall investigate whether a latent defect exists. If a latent defect exists then the importer shall –
 - (a) stop the importation and supply of the pressure equipment until the defect is corrected, and
 - (b) advise users of that pressure equipment of any corrective measures that shall be taken.
- (3) The importer shall assume the responsibility of the manufacturer in terms of these regulations.

REGULATION 6

DUTIES OF USERS

- 6.(1) Users shall ensure the pressure equipment is operated and maintained within its design and operating parameters.
- (2) The user, if not the owner of the pressure equipment, shall have authorization from the owner to use the pressure equipment;
- (3) Users shall, subject the health and safety standard incorporated into these regulations in terms of section 44 of the Act-
 - (a) identify and provide the information of the characteristics of the fluid for classification to the manufacturer as required;
 - (b) ensure pressure equipment has a valid certificate of conformity, issued by the manufacturer, and verified by an inspection authority where applicable, which certifies that the pressure equipment has been designed and manufactured in accordance with the approved health and safety standard incorporated into these regulations; and
 - (c) ensure pressure equipment has a valid certificate of repair or modification, issued by the repairer or modifier and verified by an approved inspection authority within their approved scope of work, where applicable, which certifies that the pressure equipment has been modified or repaired in accordance with the approved health and safety standard incorporated into these regulations;

- (d) ensure that pressure equipment that has been newly installed, modified or repaired is not commissioned without a valid certificate, certifying that the pressure equipment is ready for commissioning issued by an approved inspection authority within their approved scope of work, where applicable, excluding in-situ modifications and repairs. And furthermore ensure that for fuel gas systems a valid certificate of commissioning has been obtained from the registered installer or Approved Inspection Authority as applicable-
- (i) that the installation is safe for operation; and
- (ii) comply with any other responsibilities assigned to the user in these regulations.

REGULATION 7

APPROVAL AND DUTIES OF APPROVED INSPECTION AUTHORITY

- 7.(1) Only organisations holding valid approval or recognition from the chief inspector shall perform the duties of an approved inspection authority within his scope of accreditation;
- (2) The chief inspector's approval is subject to a valid accreditation by the South African National Accreditation System (SANAS). The chief inspector may set criteria in addition to accreditation before granting approval.
- (3) Applications for approval shall include proof of accreditation as prescribed under sub regulation (2), complete details of field of activities, full contact and address information.
- (4) Inspection authority organisations operating outside the Republic of South Africa shall apply to the chief inspector for recognition to perform approved inspection authority duties on imported pressure equipment for use in the Republic.
- (5) Applications for recognition shall include a valid approval as an inspection authority by the equivalent of the chief inspector in the country in which the organisation performs its functions complete details of field of activities, full contact and address information.
- (6) Any case involving a dispute of a technical or safety issue, which could not be reasonably resolved between an approved inspection authority and any of the following parties, user, modifier, repairer or manufacturer, may be referred to the chief inspector in writing. Full details of the technical or safety issue are to be set out by both parties.

- (7) In any case referred to the chief inspector under sub-regulation (6) shall be investigated and arbitrated upon within 90 days of receipt;
- (8) The approved inspection authority shall ensure compliance with any other responsibilities assigned to an Approved Inspection Authority in these regulations.

REGULATION 8

REGISTRATION OF A STEAM GENERATOR

- 8.(1) No user shall use a steam generator unless in possession of a certificate of registration issued in terms of sub-regulation (3) for that boiler.
- (2) Application for registration to use a steam generator shall be made to the provincial director in the form of an Annexure 2, prior to use, including copies of the manufacturers certificate and of the Approved Inspection Authority commissioning report: Provided that this sub-regulation shall not apply in respect of the re-erection of a steam generator on the same premises.
- (3) On receipt of an application of registration as contemplated in sub-regulation (1), the provincial director shall forward such an application to an inspector who may issue a certificate of registration in the form of Part C of Annexure 2 in respect of that steam generator, subject to such conditions as may be specified on the certificate.
- (4) Any user of a steam generator for which a certificate of registration has been issued shall cause the certificate of registration to be made available for inspection by an inspector of the regulatory authority or on request by an approved inspection authority or a competent inspector.
- (5) The user shall within seven days after the discovery that the certificate of registration has been lost, defaced, destroyed or any such occurrence, apply to the provincial director in the form of Part A of Annexure 2 for the issue of a duplicate certificate, and affix the prescribed fee in the form of un-cancelled revenue stamps to such an application. On receipt of such application the provincial director shall submit the application to an inspector of his department who shall issue the duplicate certificate on satisfaction that the original certificate was lost, defaced or destroyed.
- (6) An inspector may at any time amend, suspend or cancel a certificate of registration issued in terms of sub-regulation (3).
- (7) Any user of a steam generator shall forthwith notify the provincial director in writing when –

- (a) such steam generator is no longer in use;
 - (b) the right of control over the use of the steam generator is transferred by the user to any other user; or
 - (c) the user moves the steam generator to premises other than the premises reflected on its certificate of registration.
- (8) A certificate of registration issued in terms of sub-regulation (3) shall lapse –
- (a) when it is cancelled by an inspector;
 - (b) upon the transfer of the right of control over the use of the steam generator to another user; or
 - (c) when a steam generator is removed from the premises reflected on its certificate of registration.

REGULATION 9

PRESSURE EQUIPMENT MARKING

- 9.(1) Every manufacturer of pressure equipment shall cause the pressure equipment such as but not limited to every portable gas container, accumulator, hand-held fire extinguisher, pressure accessory and safety accessory, to be marked according to the relevant health and safety standard incorporated into these regulations.
- (2) Every user shall cause piping containing dangerous substances to be traceable to the original design criteria.
- (3) Every manufacturer shall cause a data plate to be securely fixed in a conspicuous place to atmospheric storage vessel containing dangerous substances, steam generators and pressure vessels with the following minimum particulars –
- (a) name of manufacturer;
 - (b) country of origin;
 - (c) year of manufacture;
 - (d) manufacturer's serial number;
 - (e) reference number, date and edition of the health and safety standard;
 - (f) design pressure in units of Pascal;
 - (g) design temperature for both minimum and maximum in degrees Celsius;
 - (h) capacity in cubic metres;
 - (i) the hazard category in accordance with a health and safety standard incorporated into these regulations in terms of section 44 of the Act; and

- (j) mark of an approved inspection authority or symbol of the manufacturer as applicable in accordance with a health and safety standard incorporated into these regulations in terms of section 44 of the Act.
- (4) No person shall remove such a marking or plate or willfully damage or alter the particulars marked thereon, except as provided in the regulation.
- (5) The user shall ensure that the manufacturer's plate on insulated or lagged vessel is mounted in a position where it is conspicuous.
- (6) The user shall ensure that any modification that changes the original design conditions is identified by affixing an additional nameplate.
- (7) The user shall ensure that a nameplate is affixed to any applicable pressure equipment that needs to be re-certified. Where the manufacturer is unknown, the entity responsible for the re-certification shall become the manufacturer.

REGULATION 10

INSPECTION AND TEST

- 10.(1) Subject to the requirements under a health and safety standard incorporated into these regulations in terms of section 44 of the Act, the user shall ensure that –
- (a) after installation, re-installation, modifications or repairs and before commissioning of steam generators or pressure vessels, an internal and external inspection and witness of a hydraulic pressure test to a minimum of 1,25 times the design pressure by an approved inspection authority: Provided the user may dispense with the internal inspection and hydraulic pressure test where it could have an adverse effect on the operation or integrity of the pressure equipment subject to the written approval of an approved inspection authority;
 - (b) after installation, re-installation, modifications or repairs and before commissioning of pipeline and piping an external inspection and witness of a hydraulic pressure test in accordance with a health and safety standard incorporated into these regulations in terms of section 44 of the Act, by an approved inspection authority: Provided the user may dispense with the hydraulic pressure test where it could have an adverse effect on that specific operation or integrity of that pipeline and piping subject to the written approval of an approved inspection authority for that installation;
 - (c) every fire tube steam generator to be subjected to an internal and external inspection every 12 months and a witnessed hydraulic test and crack detection of critical welds every 36 months, by an approved inspection authority for In-service inspection appointed by the user in writing;

- (d) every pressure vessel and steam generator, excluding those in sub-regulation (3), shall be subject to internal and external inspection and a witnessed hydraulic test to a minimum pressure of 1.25 times design pressure, at intervals not exceeding 36 months by a approved Inspection authority for In-service inspection appointed by the user in writing: Provided that where a pressure vessel is not subject to degradation the user may dispense with the internal inspection and hydraulic pressure test, subject to a review at a maximum period of 10 years for that vessel and the written approval by an approved inspection authority based on the criteria of a health and safety standard incorporated into these regulations in terms of section 44 of the Act.
 - (e) the chief inspector may require a specific boiler or pressure vessel to be inspected or tested more frequently;
 - (f) all piping and pipelines to be subjected to a risk assessment applying sound engineering practice, by a competent person, as defined in the General Machinery Regulations 2, appointed by the user in writing to determine the inspection requirements and intervals;
 - (g) after installation, re-installation, modifications or repairs and before commissioning of an atmospheric storage vessel containing dangerous substances, an internal and external inspection and witness of a leak test in accordance to the health and safety standard by the manufacturer and appointed competent person for the premises; and
 - (h) every atmospheric storage vessel containing a dangerous substance shall be subjected to a condition assessment applying sound engineering practice every 5 years by a competent person as defined in the General Machinery Regulation 2, for the premises where the capacity is equal to or less than 15 cubic metres and by a approved Inspection Authority for In-service Inspection appointed by the user in writing, where the capacity is above 15 cubic metres.
- (2) After installation, re-installation, modifications or repairs and before commissioning of gas fuel system an external inspection and witness of a hydraulic pressure test, by a registered person in terms of regulation 17(3).
 - (3) Pressure equipment designed to be used in different locations, as a unit shall:
 - (a) be inspected and tested in accordance with the requirements of the health and safety standards after manufacturing and assembly as a unit;
 - (b) be subjected to an external visual inspection, by a suitably trained person appointed by the user, after being moved before use;

- (c) comply with the requirements of these regulations for in-service inspection and testing;
 - (d) comply with the requirements of these regulations for repairs and modifications;
- (4) Where it is impracticable to use a liquid for the hydraulic pressure test contemplated in sub-regulations (d), (e) or (f), the test may, subject to the prior written approval of an approved inspection authority, be carried out with a non-flammable gas to a pressure of 1,1 times the design pressure: Provided that, where reasonably practicable, the test shall be preceded by an internal inspection and any conditions and precautionary measures determined by the user and approved by the approved inspection authority.
- (5) Where an inspection or test carried out in terms of sub-regulation (d), (e), (f) and (g) reveals any weakness or defect whereby the safety of persons may be endangered, the weakness or defect shall be reported forthwith to the user by the person carrying out the inspection or test and the user shall forthwith cease the use of the pressure equipment until such weakness or defect has been rectified to the satisfaction of the person who carried out the inspection and the approved inspection authority concerned in cases of modifications and repairs as the case may be, or the steam generator, pressure vessel or non-pressure vessel has been down rated to the satisfaction of the approved inspection authority.

REGULATION 11

RISK BASED INSPECTION

- 11.(1) The user may, as an alternative to the in-service inspection and testing requirements of regulation 10(1), implement a Risk Based Inspection management system. Approval to implement a Risk Based Inspection management system shall be obtained from the Department of Labour prior to implementation.
- (2) The Risk Based Inspection process and implementation shall be verified by an organisation accredited by SANAS specifically for RBI and approved by the chief inspector.

REGULATION 12

OPERATION, MAINTENANCE AND SERVICING

12. No user shall use, cause or permit any pressure equipment including the pressure and safety accessories, to be used unless it is at all times operated and maintained

in a safe working condition and its condition is proved by regular inspection and testing.

REGULATION 13

REPAIRS AND MODIFICATIONS

13. Subject to the requirement of the health and safety standard incorporated into these regulations in terms of section 44 of the Act,
- (a) any person who intends to modify or repair any pressure equipment shall cause such modification or repair to be carried out in accordance with an approved health and safety standard, incorporated in section 44 of the Act and in accordance with the assessment procedure, as specified by the relevant hazard category.
 - (b) any modifier or repairer carrying out any modification or repair, as contemplated in sub-regulation (a), shall issue a certificate in which the extent of the modification or repair is described and certify that such work is in accordance with a health and safety standard incorporated into these regulations: Provided that such certificate shall be countersigned by the approved inspection authority as evidence that the design of such modification or repair has been verified and that it has been modified or repaired and tested under their supervision in accordance with the said health and safety standard.
 - (c) any user requiring re-certification of any pressure equipment shall ensure that the re-certification is performed under the supervision of an approved inspection authority.
 - (d) whenever it appears from any inspection or test that pressure equipment cannot be used safely at its design criteria and the user opts not to have the necessary repairs effected immediately, the user shall, subject to approval by an approved inspection authority, ensure that the pressure equipment is down rated, the nameplate amended and the pressure equipment is operated within the down rated criteria, provided, in the case of a steam generator, the registration certificate together with a copy of the approved inspection authority's design verification report shall be forwarded to the provincial director for updating of the steam generator registration.

REGULATION 14

RECORDS

- 14.(1) Any user of pressure equipment shall keep a record, which shall be open for inspection by the chief inspector or his/her appointed representative, a competent

inspector and/or an approved inspection authority, in which the manufacturing history, classification, results of all inspections, tests, modifications and repairs shall be recorded, dated and signed by the appointed competent inspector and/or Approved Inspection Authority as applicable. The user shall at all times have access to the pressure equipment records if these records are in possession of the owner.

- (2) The user may request from the manufacturer or supplier as a minimum the following documentation;
 - (a) certificate of manufacture countersigned by the approved inspection authority;
 - (b) manufacturers certificate of compliance;
 - (c) as built drawing, including the standard;
 - (d) replica of nameplate;
 - (e) hydraulic test certificate; and
 - (f) operating instructions.
- (3) The Manufacturer or Supplier shall supply the user the following documents:
 - (a) operating instructions; and
 - (b) certificate of manufacture.
- (4) The manufacturer shall maintain for a minimum of 5 years trace ability to the original manufacturing records of the pressure equipment.

REGULATION 15

ACCESS

15. The user shall cause pressure equipment to be erected in such a manner that access to and exit from any chamber, flue, manhole, inspection opening, control or accessory is safe and unobstructed.

REGULATION 16

DOOR INTERLOCKS

16. Any user of pressure equipment shall cause such pressure equipment which for operational purposes is equipped with a quick actuating opening to be provided with an interlock or other effective means for preventing –
 - (a) a rise of pressure inside the pressure equipment before the quick actuating openings are in the fully closed and locked position; and

- (b) the release of the quick actuating opening from the locked and closed position before the pressure inside the pressure equipment has been reduced to atmospheric pressure or the pressure across the openings are equalised.

REGULATION 17

GAS FUEL USE, PRESSURE EQUIPMENT AND SYSTEMS

- 17.(1) No person shall handle, store or distribute a gas fuel in any manner, including the filling of a container, other than in accordance with a health and safety standard incorporated into these regulations under section 44 of the Act.
- (2) No person shall install an appliance, pressure equipment or systems for gas fuel in any manner other than in accordance with a safety standard incorporated into these regulations under section 44 of the Act.
- (3) No person shall install an appliance, pressure equipment or systems for gas fuel unless such person is a holder of a certificate of registration issued by an organisation approved by the chief inspector.
- (4) No person shall use pressure equipment or systems for gas fuel in any manner other than in accordance with a safety standard incorporated into these regulations under section 44 of the Act.
- (5) An authorized person shall issue a certificate of conformity after completion of an gas installation, modification, alteration or change of user in the form of annexure 1.

REGULATION 18

TRANSPORTABLE GAS CONTAINERS

- 18. No user shall use or require or permit a portable gas container to be used, and no user shall fill, place in service, handle, modify, repair, inspect or test any portable gas container, other than in compliance with standards incorporated into these regulations in terms of section 44 of the Act.

REGULATION 19

FIRE EXTINGUISHERS

- 19.(1) No user shall use, require or permit the use of a fire extinguisher unless designed, constructed, filled, recharged, reconditioned, modified, repaired, inspected or tested in accordance with a safety standard incorporated into these regulations in terms of section 44 of the Act.

- (2) No person shall fill, recharge, recondition, modify, repair, inspect or test any fire extinguisher unless a holder of a permit issued by the South African Bureau of Standards in terms of SANS 1475.

REGULATION 20

OFFENCES AND PENALTIES

20. Any person who contravenes or fails to comply with any of the provisions of regulations 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, shall be guilty of an offence and liable upon conviction to a fine or to imprisonment for a maximum of 12 months and, in the case of a continuous offence, to an additional fine of R200 for each day on which the continues: Provided that the period of such additional imprisonment shall not exceed 90 days.

REGULATION 21

REPEAL OF REGULATIONS AND ANNEXURES

- 21.(1) The following regulations, notices and annexures are hereby repealed –
- (a) Vessels under Pressure Regulation 1996, Annexure 1 and schedule published under Government Notice No. R.1591, dated 4 October 1996;
 - (b) Notice of the incorporation of the safety standards published under Government Notice No. R.1625, dated 4 October 1996;
 - (c) Notice of exemption in terms of section 40(1) published under Government Notice No. R.798 dated 4 October 1996; and
 - (d) Notice of exemption in terms of section 40(1) published under Government Notice No. R.1017 dated 1 August 1997.
- (2) All previous exemptions issued are hereby repealed.
- (3) New exemptions issued in terms of these regulations shall be forthcoming within (12) months of promulgation of these regulations.

REGULATION 22

SHORT TITLE

22. These regulations shall be called the Pressure Equipment Regulations, 2004

Annexure 1**CERTIFICATE OF CONFORMITY FOR GAS FUEL INSTALLATION****OCCUPATIONAL HEALTH AND SAFETY ACT, 1993
Regulation 17(5) of the Pressure Equipment Regulations****Certificate of Conformity by an Authorized Person**

I, _____, declare that I am an authorized person for gas
fuel installation with registration number _____ and ID number _____
Address _____

Telephone number (_____) _____

I further declare that I inspected and tested the installation at:

Street _____
Stand number _____
Name of building _____
Name of farm _____
Number of farm _____
Township/Municipality/District _____
Name of gas fuel supplier _____
Type of gas fuel _____
Amount of gas store on premises _____ kg

and that in terms of regulation 17(5) the installation complies with the provisions of
17.(2) and that the installation is safe.

I am aware that I am liable to prosecution in the case of a false declaration.

Signature

Date

Annexure 2
REGISTRATION OF A STEAM GENERATOR

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993
Regulation 8.(2) of the Pressure Equipment Regulations

Registration of a steam generator

A. APPLICATION FOR REGISTRATION OF A STEAM GENERATOR/DUPLICATE CERTIFICATE

To: Provincial Director
Department of Labour

From: (Postal Address)

Tel _____
Fax _____

I (user) (legal persona) _____ hereby apply for registration /duplicate registration certificate of a steam generator, particulars of which are reflected in Part B below.

Signature of applicant

Date

Name of Applicant (In block letters)

Designation of applicant

B. PARTICULARS OF STEAM GENERATOR

1. Physical address of installation _____
2. Type of steam generator _____
3. Name of manufacturer _____
4. Country of origin _____
5. Year of manufacture _____
6. Manufacturer's serial number _____
7. Name, number and date of the standard of design _____
8. Design gauge pressure in pascals _____
9. Maximum permissible operating pressure in pascals _____
10. Operating temperature _____
11. Source of enegy (oil, coal, gas, electricity or nuclear) _____
12. Steaming capacity of steam generator _____ kg of steam per hour
from and at 100degree Celsius
13. Name of approved inspection authority (during manufacture) _____

14. Copy of manufacturer's certificate shall be attached _____
15. Copy of approved inspection authority's commissioning report shall be attached _____

FOR OFFICIAL USE ONLY**C. STEAM GENERATOR REGISTRATION CERTIFICATE**

The steam generator of which the particulars appear in Part B has this day _____
been registered with the official number _____
Permission is hereby granted to use the boiler at a maximum permissible pressure of
_____ kPa.

Signature of inspector

Official stamp

Issue of duplicate steam generator registration certificate

Revenue stamps for duplicate
certificate

Date _____

Signature _____

No. R. 1095

17 September 2004

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993

**INCORPORATION OF HEALTH AND SAFETY STANDARDS:
PRESSURE EQUIPMENT REGULATIONS**

Under section 44 of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), I, Tim Curtis, appointed as acting chief inspector in terms of section 27 (1) of the said Act, and by virtue of the power delegated to me by the Minister of Labour in terms of section 42 (1) of the Act, after consultation with the Advisory Council for Occupational Health and Safety, hereby incorporate in the Pressure Equipment Regulations, 2004, the health and safety standards specified in the Schedule.

M.M.S. Mdladlana
Minister of Labour

SCHEDULE**1. Regulation 4.(1) and 9.(3)(j)****SOUTH AFRICA**

Standards South Africa standard specification

SANS 10227 The evaluation of the technical competence of inspection authorities for the certification, recertification, modification or repair of vessels under pressure

2. Regulation 4.(1)), 6.(3) and 10.(1)**AUSTRALIA**

Australian Standards, standard specifications

AS 1200 Boilers and pressure vessels

AS 1210 Unfired pressure vessels - Advanced design and construction

AS 1228 Boilers: water tube type

AS 1777 Aluminium cylinders for compressed gases - seamless 0.1 kg to 130 kg.

AS 1797 Boilers: Fire tube, shell and miscellaneous

AS 2470 Steel cylinders for compressed gases welded 11 kg to 150 kg.

AS 2527 Cylinders for dissolved acetylene

AS 2873 Carbon-manganese steel cylinders for compressed gases. seamless: 0.1 kg to 500 kg.

AS 2874 High tensile Carbon-manganese steel cylinders for compressed gases, seamless: 0.1 kg to 500 kg.

AS 2875 Alloy steel cylinders for compressed gases, seamless: 0.1 kg to 500 kg.

- AS 2971 Serially produced pressure vessels
- AS 3577 Steel cylinders for compressed gases, welded: 150 kg to 500 kg.
- AS B10 High carbon steel cylinders for the storage and transport of permanent gases.
- AS B11 High carbon steel cylinders for the storage and transport of high pressure liquefiable gases.
- AS B12 Low carbon steel cylinders for the storage and transport of medium pressure liquefiable gases.
- AS B111 Manganese steel cylinders for the storage and transport of high pressure liquefiable gases.
- AS B113 High tensile carbon-manganese steel cylinders for the storage and transport of permanent gases and high pressure liquefiable gases.
- AS B114 Ahoy steel cylinders for the storage and transport of permanent gases and high pressure liquefiable gases.
- AS B239 Welded steel cylinders for compressed gases of capacity over 10 litres up to and including 130 litres.

CANADA

- Canadian Transport Commission Regulations.
- TC 4BA Welded or Brazed cylinders made of definitely prescribed steels.
- TC 4BW Welded steel cylinders made of definitely prescribed steels with electric-arc welded longitudinal seam.

FRANCE

- NFE 31-001 Boilers operating with solid, liquid or gases fuels
- NFA 49-901 Gas cylinders - seamless steel cylinders for compressed, liquefied or dissolved gases.
- NC :1969 French code for the manufacture of unfired pressure vessels: Design rules

GERMANY

- German Institute of Standards, standard specifications
- DIN 2918 Stationary shell boilers of welded construction. (Other than water tube boilers.)
- DIN 4661 Gas cylinders, welded steel gas cylinders, at test pressure 30 atm.
- DIN 4663 Compressed gas containers; seamless aluminium alloy cylinders, rated for 250 Bars and 300 Bar test pressure.
- DIN 4664 Compressed gas containers; seamless steel gas cylinders.
- DIN 4680 Steel fixed size pressure vessels for LPG; For above ground installations, dimensions and equipment.
- DIN 28020 Horizontal pressure vessels of 0.63 up to 25 cubic metres capacity.
- DIN 28021 Horizontal pressure vessels of 6,3 up to 100 cubic metres storage capacity.
- DIN 28022 Vertical pressure vessels; vessels for intermediate storage 0,063 up to 25 cubic metres for use in chemical process engineering.

AD-MERKBLAETTER

- Technical Rules for Pressure Vessels (TRB), Druckbehvo and all sections
- Technical Rules for Steam Boilers (TRD), Dampfkrv and all sections

INTERNATIONAL

International Standards Organisation, standard specifications

ISO 831 Rules for the construction of stationary boilers.

ISO 3807 Dissolved Acetylene cylinder - Basic Requirements.

ISO 4705 Refillable seamless steel gas cylinders.

ISO 4706 Refillable welded steel gas cylinders.

ISO 5730 Stationary shell boilers of welded construction. (Other than water tube boilers.)

EEC 87-404 Directive for the construction of simple pressure vessels.

EEC 84-525 Directive for the construction of seamless, steel gas cylinders.

EEC 84-526 Directive for the construction of seamless unalloyed aluminium and aluminium alloy gas cylinders.

EEC 84-527 Directive for the construction of welded unalloyed steel gas cylinders.

EN 50 052 Cast Aluminium Alloy Enclosures for Gas filled High Voltage Switchgear end Control gear

EN 286-1 Simple unfired pressure vessels designed to contain air nitrogen; Part 1 Design and manufacture of simple pressure vessels.

EN 303-PT 1 Heating Boilers - Heating boilers with forced draught burners -

Terminology, general requirements, testing and marking.

EN 303-PT2 Heating Boilers - Heating boilers with forced draught burners - Special requirements for boilers with atomising oil burners.

Luxfer Limited, standard specification

Luxint Luxfer gas cylinder specification: For the manufacture of aluminium cylinders.

ITALY

Higher Institute for Accident Prevention and Safety at Work (Istituto Superiore per la Prevenzione e la

Sicurezza del Lavoro) ISPESL rules

VSR Rules Collection (Raccolta VSR) concerning design rules for pressure vessels.

VSG Rules Collection (Raccolta VSG) concerning design rules for boilers.

JAPAN

Japanese Industrial Standards

JIS B8201 Construction of steel boilers for land use.

JIS B8233 Refillable welded steel gas cylinders for liquefied petroleum gas.

JIS B8235 Refillable welded steel gas cylinders for liquefied fluorocarbon.

JIS B8240 Construction of pressure vessels for refrigeration.

JIS B8241 Seamless steel cylinders.

JIS B8243 Construction of pressure vessels.

UNITED KINGDOM

British Standards Institution, standard specifications

BS EN 286-1 Simple unfired pressure vessels designed to contain air or nitrogen - design, manufacture and testing.

BS 399 High carbon steel cylinders for the storage and transport of permanent gases.

BS 400 Low carbon steel cylinders for the storage and transport of permanent gases.

BS 401 Steel cylinders for the storage and transport of liquefied gases.

BS 537 Lancashire and Cornish boilers of riveted construction.
BS 609 Horizontal multitubular boilers of riveted construction.
BS 665 Vertical cross tube boilers of riveted construction.
BS 761 Vertical multitubular boilers of riveted construction.
BS 779 Specification for cast iron boilers for central heating and indirect hot water supply. (Rated output 44 kW and above)
BS 1113 Design and manufacture of water tube steam generating plant.
BS 1307 Gas-fired boilers and waste-heat boilers (with or without auxiliary firing).
BS 1894 Specification for the design and manufacture of electric boilers of welded construction.
BS 1971 Specification for corrugated furnaces for shell boilers.
BS 2790 Specification for design and manufacture of shell boilers of welded construction.
BS 3023 Corrugated furnaces and smoke tubes for marine boilers.
BS 4994 Specification of the Design and Construction of vessels and tanks in Reinforced Plastics.
BS 5045 Specification for seamless transportable gas containers. Parts: 1, 2 and 3.
BS 5169 Fusion welded steel air receivers.
BS 5500 Specification for unfired fusion welded pressure vessels.
BS 6061 Specification for transportable acetylene containers.
BS 7005 Specification for design and manufacture of carbon steel unfired pressure vessels for use in vapour compression refrigeration systems.
BS 7122 Specification for welded steel tanks for road transport of liquefied gases.
BS EN 13445 Unfired Pressure vessels

Lloyds Register, standard specifications

Lloyds Rules and Regulations for the design and construction or use of boilers, pressure vessels, pressurised systems or portable gas containers.

UNITED STATES OF AMERICA

American Society of Mechanical Engineers, standard specifications

ASME Section I Power Boilers

ASME Section III Rules for the construction of nuclear power plant components - code for concrete reactor vessels and containments

ASME Section IV Low-pressure Heating Boilers

ASME Section VIII Unfired Pressure Vessels (Divisions 1 and 2)

ASME Section X Fibreglass-reinforced plastic pressure vessels

ASME Part B31 Pressurised piping systems:

Part 1-Power piping.

Part 3-Chemical plant and petroleum refinery piping.

Part 4-Liquid transportation systems for hydrocarbons, liquid petroleum gas, anhydrous ammonia and alcohols.

Part 5-Refrigeration piping.

Part 8-Gas transmission and distribution piping systems.

American Petroleum Institute, standard specifications

API620 Design & construction of large, welded, low pressure storage tanks.

United States, Department of Transport Regulations: Code of Federal Regulations, Title 49

DOT 4BW Welded steel cylinders made of definitely prescribed steels with electric-are welded longitudinal seam. Including DOT 4BA

DOT 39 Non reusable - non refillable cylinder

DOT 8 Welded steel cylinders made of definitely prescribed steels for the transportation of acetylene.

DOT E-10-320 Welded steel cylinders made of definitely prescribed steels electric-are welded longitudinal seam for the transportation of acetylene.

DOT 4E Welded aluminium cylinders made of definitely prescribed aluminium.

The Association of American Railroads

Section C, Part III - Specifications for Tank Cars, M1002

Hartford Steam Boiler Inspection and Insurance Company

HSB-ARS-86 Standard for air receivers.

Tubular Exchange Manufacturers Association, Inc. (TEMA) rules.

SOUTH AFRICA

Standards South Africa standard specification

SANS 50 The design and manufacture of seamless steel cylinders for high and low pressure service.

SANS 10099 The construction of air receivers

SANS 219 The design and manufacture of welded steel cylinders for low pressure service.

SANS 220 Dissolved acetylene cylinders.

SANS 1571 Transportable rechargeable fire extinguishers.

South African Bureau of Standards, codes of practice

SANS 10019 Transportable metal containers for compressed gases: Basic design, manufacture, use and maintenance.

3. Regulation 4.(1)(d) and 9.(3)(i)

SOUTH AFRICA

Standards South Africa standard specification

SANS 10228 The identification and classification of dangerous substances and goods.

4. Regulation 17

UNITED STATES OF AMERICA

American Society of Mechanical Engineers, standard specifications

ASME Part B31 Pressurised piping systems:

Part 3-Chemical plant and petroleum refinery piping.

Part 4-Liquid transportation systems for hydrocarbons, liquid petroleum gas, anhydrous ammonia and alcohols.

Part 8-Gas transmission and distribution piping systems.

American National Standards Institute

ANSI Z223.1 National Fuel Gas Code

SOUTH AFRICA

Standards South Africa standard specification

SANS 10087 Handling Storage and Distribution of liquefied Petroleum Gas in Domestic, Commercial and Industrial Installations.

Part 1: Consumer Liquefied Petroleum Gas Cylinder Installations.

Part 2: Installations in Mobile Units and Small Non-Permanent Buildings.

Part 3: Bulk Liquefied Petroleum Gas Storage and Allied Facilities at Consumer's Premises.

Part 4: Transportation of liquefied Petroleum Gas in Bulk by Road.

Part 6: Liquefied Petroleum Gas as Engine Fuel.

Part 7: Retail outlet and similar Liquefied Petroleum Gas Filling Sites for Small Containers.

Part 8: The Fueling of Fork Lift Trucks and Other Liquefied Petroleum Gas Operated Vehicles.

Part 10: Mobile filling stations for refillable liquefied petroleum gas (LPG) containers of capacity not exceeding 9kg.

SANS 1539 Appliances operating on liquefied petroleum gas - Portable and mobile appliances - Safety aspects.

SANS EN 14140 Transportable refillable welded steel cylinders for liquefied petroleum gas.

5. Regulation 18 and 19**SOUTH AFRICA**

Standards South Africa standard specification

SANS 10019 Portable metal containers for compressed gases: Basic design criteria, use and maintenance.

SANS 1825: Portable gas cylinder test stations – Approval and general requirements

6. Regulation 19**SOUTH AFRICA**

Standards South Africa standard specification

SANS 1151 Portable rechargeable fire extinguishers -Halogenated hydrocarbon type extinguishers.

SANS 1475 The production of reconditioned fire-fighting equipment.

SANS 1567 Portable rechargeable fire extinguishers - CO2 type extinguishers.

South African Bureau of Standards, codes of practice

SANS 10105 The classification, use and routine maintenance of fire-fighting appliances.

Part 1: Portable fire extinguishers

SANS 1910 Portable refillable fire extinguishers

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