

PETRONAS TECHNICAL STANDARDS

DESIGN AND ENGINEERING PRACTICE

MANUAL

PROTECTIVE STEAM HEATING OF PIPING SYSTEM

PTS 31.38.30.11

DECEMBER 2010



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PTS Circular 2010 - 1



PTS No:	31.38.30.11
PTS Title:	Protective Steam Heating of Piping System

This revision of PTS 31.38.30.11 - Protective Steam Heating of Piping System (September 1991) has been updated to incorporate PETRONAS Lessons Learnt, Best Practice and new information issued by relevant industry code and standards. All updates in the document are highlighted in *italic* font.

The previous version of this PTS 31.38.30.11 (Sept 1991) will be removed from PTS binder / e-repository from herein onwards.

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Revision History

Rev No.	Reviewed by	Approved by	Date
1	MFM, AHM	AA	Dec 2010



PREFACE

PETRONAS Technical Standards (PTS) publications reflect the views, at the time of publication of PETRONAS OPU/Divisions.

They are based on the experience acquired during the involvement with the design, construction, operation and maintenance of processing units and facilities. Where appropriate they are based on, or reference is made to, national and international standards and codes of practice.

The objective is to set the recommended standard for good technical practice to be applied by PETRONAS' OPU in oil and gas production facilities, refineries, gas processing plants, chemical plants, marketing facilities or any other such facility, and thereby to achieve maximum technical and economic benefit from standardisation.

The information set forth in these publications is provided to users for their consideration and decision to implement. This is of particular importance where PTS may not cover every requirement or diversity of condition at each locality. The system of PTS is expected to be sufficiently flexible to allow individual operating units to adapt the information set forth in PTS to their own environment and requirements.

When Contractors or Manufacturers/Suppliers use PTS they shall be solely responsible for the quality of work and the attainment of the required design and engineering standards. In particular, for those requirements not specifically covered, it is expected of them to follow those design and engineering practices which will achieve the same level of integrity as reflected in the PTS. If in doubt, the Contractor or Manufacturer/Supplier shall, without detracting from his own responsibility, consult the owner.

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1. INTRODUCTION

1.1 SCOPE

This PTS specifies requirements and gives recommendations for protective steam heating of piping systems (excluding transmission pipelines).

This PTS is a revision of an earlier PTS of the same number, dated September 1991.

Hot oil and hot water protective heating systems are excluded from the scope of this PTS.

Design requirements for steam distribution systems are also excluded from the scope of this PTS.

Also excluded from the scope of this PTS is electrical trace heating, for which PTS 33.68.30.32 applies.

1.2 DISTRIBUTION, INTENDED USE AND REGULATORY CONSIDERATIONS

Unless otherwise authorised by PETRONAS, the distribution of this PTS is confined to PETRONAS companies forming part of PETRONAS Group and to Contractors and Manufacturers/Suppliers nominated by them.

This PTS is intended for use in oil refineries, chemical plants, gas plants and supply/distribution installations, and, where applicable, onshore exploration and production facilities (all within the property limits as defined in ASME B31.3:2006, Section 300.1).

If national and/or local regulations exist in which some of the requirements may be more stringent than in this PTS, the Contractor shall determine by careful scrutiny which of the requirements are the more stringent and which combination of requirements will be acceptable as regards safety, economic and legal aspects. In all cases the Contractor shall inform the Principal of any deviation from the requirements of this PTS which is considered to be necessary in order to comply with national and/or local regulations. The Principal may then negotiate with the Authorities concerned with the object of obtaining agreement to follow this PTS as closely as possible.

1.3 DEFINITIONS

1.3.1 General definitions

The **Contractor** is the party which carries out all or part of the design, engineering, procurement, construction, commissioning or management of a project or operation of a facility. The Principal may undertake all or part of the duties of the Contractor.

The **Manufacturer/Supplier** is the party which manufactures or supplies equipment, technical documents/drawings and services to perform the duties specified by the Contractor.

The **Principal** is the party which initiates the project and ultimately pays for its design and construction. The Principal will generally specify the technical requirements. The Principal may also include an agent or consultant authorised to act for, and on behalf of, the Principal.

The word **shall** indicates a requirement.

The word **should** indicates a recommendation.

1.3.2 Specific definitions

CM	Collecting Manifold for steam tracers
DM	Distribution Manifold for steam tracers
lead	the steam line from a DM to a tracer
steam trap	an automatic device used to remove condensate from a steam system with a minimum loss of live steam. For terminology and diagrams of steam traps, reference is made to ISO 6704.
Tail	the steam line from a tracer to the CM
tracer	steam heating piping which runs along the process pipe

1.4 CROSS-REFERENCES

Where cross-references to other parts of this PTS are made, the referenced section number is shown in brackets. Other documents referenced by this PTS are listed in (9).

1.5 CHANGES SINCE PREVIOUS EDITION

This revision was purely editorial update without any technical changes.