

THE REVISION OF THE NPD REGULATION FOR FISCAL
MEASUREMENT OF OIL AND GAS

by

S Fosse
The Norwegian Petroleum Directorate, Stavanger

S U M M A R Y

This paper gives the status of the ongoing work to update the Norwegian Petroleum Directorate (NPD) regulation. It gives reasons, aims and ways to achieve the goal.

The paper also states two important areas within the mechanical and computer part where the NPD policy is undergoing a change from the recent regulation, (Compact prover and supervisory computers).

Our present regulation is based on the 'Royal Decree of 8 December 1972 relating to exploration for and exploitation of petroleum in the seabed and substrata of the Norwegian continental shelf'.

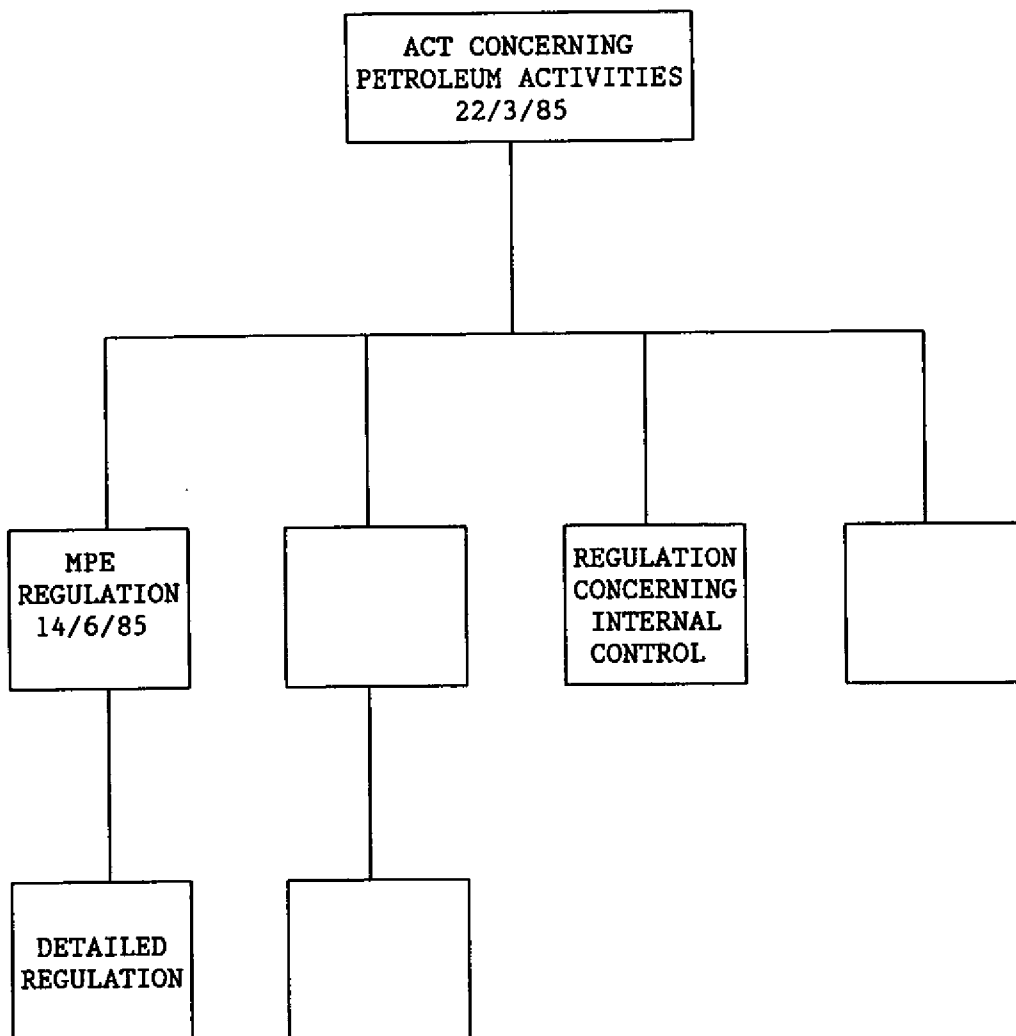


FIG 1 THE STRUCTURE OF THE PETROLEUM LEGISLATION

REASONS FOR A NEW REGULATION

AIM:

Requirements for the construction/operation of the system, in terms of uncertainty limits for various types of equipment.

INPUT:

- 1 Comments from users
- 2 Existing regulation
- 3 NPD metering experience
- 4 Legal adaption/economical consequences.

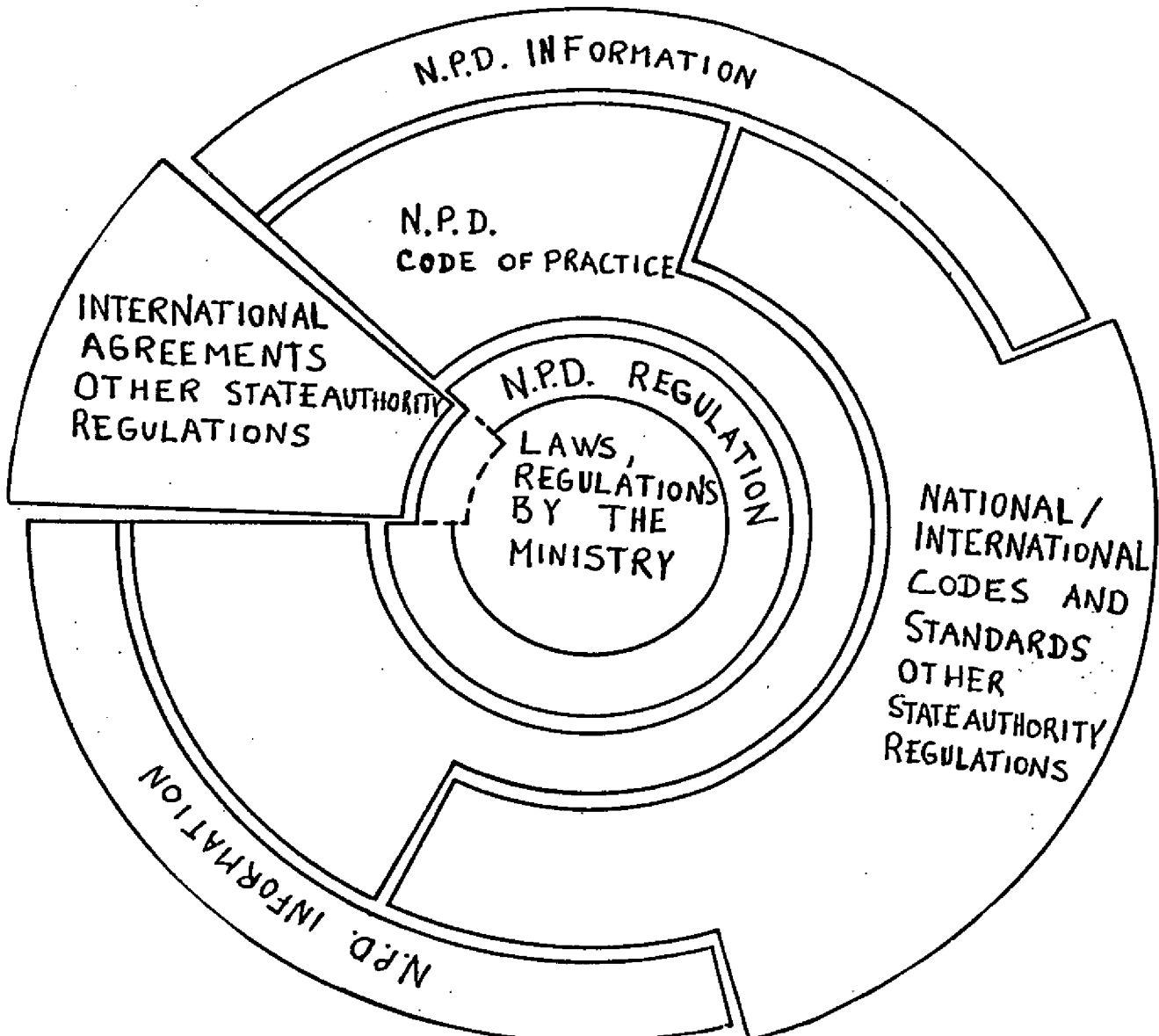


FIG 2 DEVELOPMENT OF A FISCAL REGULATION

REFERENCE GROUP

TASK

- 1 Each member must, within time limits of 3-4 weeks, comment on the various chapters
- 2 NPD can, within the same limits, ask the members in the Task Force to do special work within limited areas of the regulation.

For example:

- a Propose wording for certain sections
- b Evaluation of the content of specific selected standards.

The process of developing a new regulation is a rather slow process. It was initiated in Spring 1986. All parties concerned were invited to give in views/experience.

In Spring 1988 the process started to accelerate and the present time limits are:

Phase I Preparation 1 July 1988

Phase II Development 1 December 1988

Phase III Issuing for external comments 1 February 1989

Phase IV Entry into force 1 July 1989.

CONCLUSIONS

- 1 Oil/gas regulation has been marked into one regulation.
- 2 We collect the various sections within topic areas. It means that you now will find all requirements related to gas metering pipes under one section and one heading.
- 3 Regulation will still refer to turbinemeter/prover and orifice, as accepted equipment for fiscal metering. The code of practice will give advice in the use of other types of equipment.
 - Repeatability and accuracy will be set for the various parts of the metering system and as a total. All types of equipment selected shall operate within these limits
 - Various traceability requirements will be set.

MAIN CONSENTS FOR DEVELOPMENT AND OPERATION

1 Consent to detailed engineering (reference Section 11A, Safety Regulation)

2 Consent for fabrication of a metering package (reference Section 11B, Safety Regulation)

3 Consent to shipment from fabrication site (reference Section 11C, Safety Regulation)

4 Consent to operation of a metering package (reference Section 11D, Safety Regulation)

5 Consent for major rebuilding or major changes in operation of a metering package.

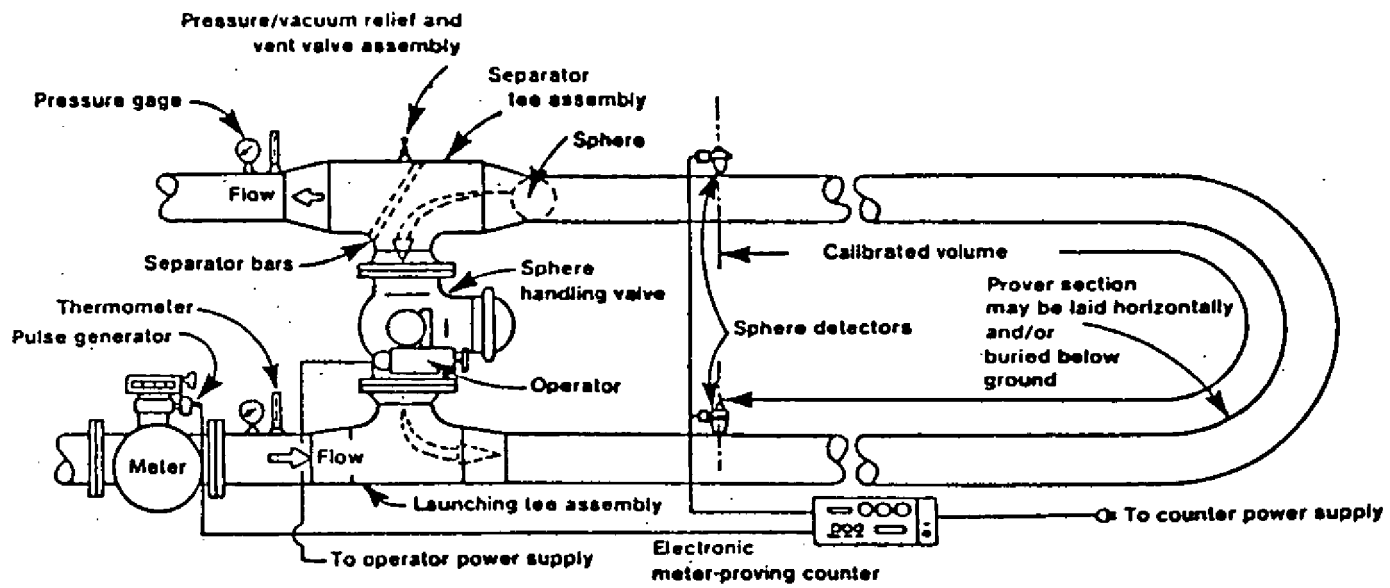


FIG 3 CONVENTIONAL BALL PROVER

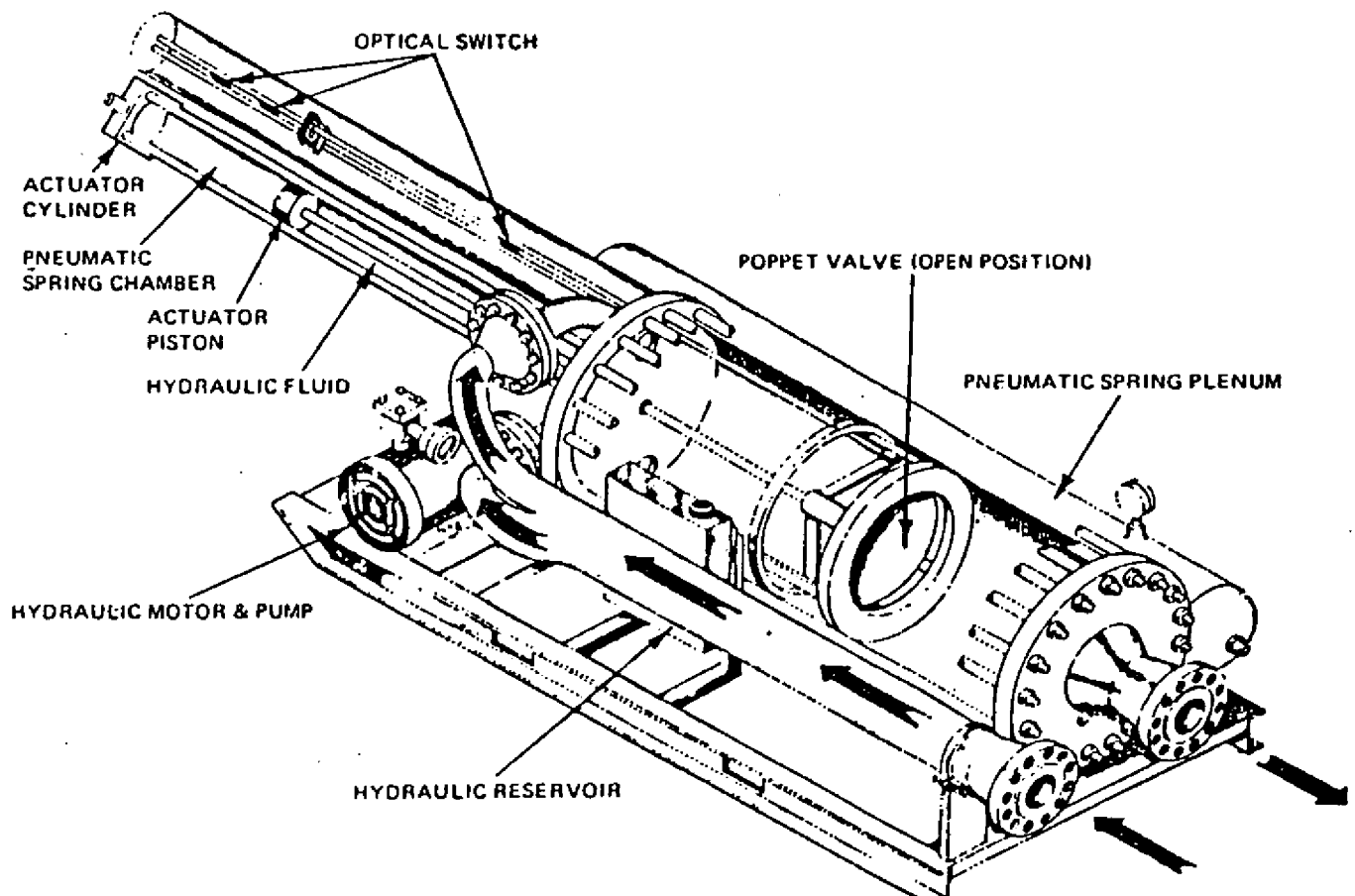


FIG 4 COMPACT PROVER

DESIGN OF THE MECHANICAL PART OF THE METERING SYSTEM

COMPACT PROVER

- NPD is now willing to accept compact provers in special cases if certain requirements are fulfilled.

1 The compact prover to be tested against a conventional prover within a limit of 0.020 per cent.

2 The licensee to present a list of all critical parts, to be available on the installation for immediate repair in case of a breakdown.

3 The compact prover to be equipped with a possibility for leak detection in the calibrated area.

4 Specific dedicated can to be available for recalibration on the installation.

5 Buffertanks/filters to be installed upstream.

6 The compact prover to be vertical mounted.

DESIGN OF THE COMPUTER PART OF THE METERING SYSTEM

- NPD's present regulation requires duplication of the supervisory computer and the supervisory computer dedicated for metering only.

- NPD will change this to a requirement for the reliability of the computer to be installed. That means that if the licensee can prove that the reliability of the supervisory computer they want to install is above a certain limit, NPD can accept one supervisory computer.

- If obvious reasons exist, NPD is willing to accept the supervisory computer to be shared with other, not fiscal activities.

References

[1] Paper presented at the North Sea Flow Measurement Workshop, a workshop arranged by NFOGM & TUV-NEL

Note that this reference was not part of the original paper, but has been added subsequently to make the paper searchable in Google Scholar.