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Guidance on Industry Standard for Actuators for Motor Operated Valves (IEC)

GIS 12-701

**BP GROUP
ENGINEERING TECHNICAL PRACTICES**

Foreword

This is the first issue of Engineering Technical Practice (ETP) GIS 12-701. This Guidance on Industry Standard (GIS) is based on the following heritage documents from merged BP companies:

BP (RPSE)

GS 112-2	Guidance for specification GS 112-2 electric motor operated valve actuators for intermittent operation of isolation valves
RP 17-22-1	Actuators for motor operated valves

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1. Scope

This GIS provides guidance on industry standard for the design, materials, fabrication, inspection, testing, documentation, and preparation for shipment of actuators for motor operated valves.

2. Normative references

The following normative documents contain requirements that, through reference in this text, constitute requirements of this technical practice. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this technical practice are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies.

International Electrotechnical Committee (IEC)

IEC 60034-1	Rotating electrical machines — Part 1: Rating and performance
IEC 60079-1	Electrical apparatus for explosive gas atmospheres — Part 1: Flameproof enclosures "d"
IEC 60269	Low voltage fuses
IEC 60529	Degrees of protection provided by enclosures (IP Code)
IEC 60947-4-1	Low voltage switchgear and controlgear — Part 4-1: Contactors and motor-starters — Electromechanical contactors and motor-starters
ISO 5210	Industrial valves: multi-turn valve actuator attachment
ISO 5211	Part-turn valve actuator attachment

3. Design, construction, and materials

3.1. Actuator

Actuator shall consist of a motor driver, reduction gearing, thrust bearing (where applicable), manual override hand wheel and local position indicator, together with torque and limit switches; all furnished as a self-contained, totally enclosed unit.

The actuator shall be sized to guarantee valve closure at the specified differential pressure. The safety margin of motor power available for seating and unseating the valve shall be sufficient to ensure torque switch trip at maximum valve torque with supply voltage 10% below nominal.

3.2. Explosion protection limitations

Explosion protection standards for electric MOV actuators shall be in accordance with IEC 60079-1.

3.3. Motor starter

Motor starter shall be remote mounted and will be supplied by others.

3.4. Reduction gears for electric motor actuators

- Gears shall be fully enclosed and immersed in a lubricant. Seals shall be rounded to prevent leakage.
- Gears shall provide an unseating torque at least 50% in excess of the valve seating torque neglecting hammer blow effect.

