Flow Control Division

Limitorque

Making Valve Control Easier™

Actuator Sizing & Applications Training
SMB & HBC

I. The Basics
- A. Course overview
- B. Methods of valve operation
- C. Purpose of actuation
- D. Valves – designs and operation

II. The Electric Actuator
- A. Basic components and design (using disassembled SMB-000 demo)
- B. Environmental considerations
- C. Product applications
- D. Basic operation – motorized and manual operation
- E. Limit switch and torque switch operation

III. Valve / Actuator Relationship
- A. How actuators transmit torque
    1. Motor operation
    2. Manual operation

IV. Motors
- A. Torque rated vs. horsepower rated designs
- B. Duty rating
- C. Run torque rating
- D. Start torque
- E. Stall torque
- F. Reduced voltage considerations

V. Actuator controls types

VI. Manual operators – design and operation

VII. Actuator selection process – required information

Limitorque Corporation
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Flow Control Division

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VIII. Actuator sizing process, step-by-step
   A. Multi-turn applications
   B. Quarter-turn applications

IX. Sizing formulas

X. Sizing examples, hand calculations

XI. Special applications – brief review
   A. Modulating
   B. Extended duty
   C. High run torque
   D. High temperature, high speed

XII. Course material review

XIII. Final Exam – written test

Generally, this program presents users of Limitorque products with a clear understanding of the application and issues associated with SMB actuators in a power plant environment. The program presentation will enable users to better resolve on-site problems that may be encountered in the operation and maintenance of utility systems. This program presents the topics and skills necessary to perform sizing of SMB-series actuators in nuclear power plants and United States Navy Ships. The program is presented in a lecture/guided format. Each student is trained in the operation of SMB actuators by becoming familiar with the actuator components and assemblies. Students also become familiar with the functional differences between the various SMB models. Ample time will be spent performing general sizing procedures for SMB actuators, along with a presentation on typical nuclear industry and shipboard considerations for the operation and maintenance of SMB actuators.

Recommended attendees are plant engineers and other personnel involved in MOV operation and monitoring. In addition, procurement personnel and others requiring a general knowledge of how actuators are sized should attend.

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