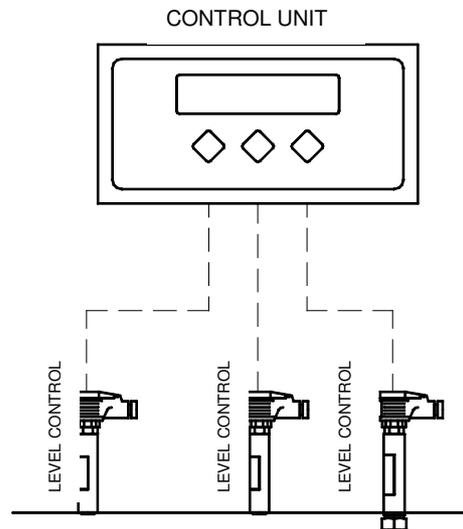


KL 27

UNMANNED OPERATION – STEAM BOILER EQUIPMENT OF BOILERS FOR OPERATION WITH A PARTIAL SURVEY CONTROL



Equipment of a steam boiler for survey control

- 1) 2 systems (ITI approved) to watch a critical minimum level of water in the boiler
- 2) 1 system (ITI approved) to watch a critical maximum level of water in the boiler
- 3) 1 system (ITI approved) for a control of water feeding into the boiler
- 4) 1 system (ITI approved) to watch a critical maximum temperature of superheated steam
- 5) 1 critical steam pressure limiter (ITI approved)
- 6) reconstruction of gas burner automatics to control tightness of the intermediate piece of main gas safety valves – unless it complies
- 7) adjustment of gas burner automatics to allow an operational stopping, adding an operational steam pressure limiter – unless it complies
- 8) a system for automatic continuous blowdown for a survey control once in 24 hours (because of operating rules given by boiler producer who states the frequency of continuous blowdown to be once or twice per shift) – for maximum 8 hour survey control it is not necessary if the continuous blowdown is carried out once per shift
- 9) a system for failure alerting and shutdown of the boiler suitable as for the location and activities of operators (sound or light, pager, phone)
- 10) a system for an automatic switch off of the unmanned operation system which after elapsing a pre-determined time interval (max. 8 hours – can be determined according to the survey control defined by the operator and ITI approved), if the operator does not confirm a regular check, the boiler will be automatically shut down.

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Equipment of a gas boiler room for a survey control

- 1) equipment in compliance with the standard ČSN 070703 – Gas boiler rooms, incl. all the amendments of the standard (operational exchange and heating of air in the boiler room incl. space ventilation according to the “boiler rooms” category)
- 2) a system for a continuous indication of natural gas in the boiler room (two-stage detection)
- 3) a system for a continuous indication of CO in the boiler room
- 4) emergency gas seal outside the boiler room enabling an automatic switch off from the 2nd stage of the gas leakage detection in the boiler room
- 5) a system indicating and alerting boiler room flooding with a link to the shutdown of gas burners of the boiler
- 6) a system indicating and alerting an overrun of temperature in the boiler room with a link to the shutdown of gas burners of the boiler
- 7) emergency buttons for power switch off near all the entrances to the boiler room

Other requirements for the operation of a boiler room with a survey control

- 1) The assembly of systems can be carried out by specialized competent organization (certified for specific activities related to the delivery and installation of the unmanned operation system).
- 2) Operators (boilermen) must be trained provably with the operation and functioning of the unmanned operation system – Protocol on operator’s training.
- 3) The owner (operator) must work out operational instructions for the boiler room without a permanent operator’s supervision.
- 4) Boiler-room operator’s office, or standing can be only on such a location which is reachable by the applied alert system and operator’s activities of such a nature only that after an alert of the unmanned operation system the operator can interrupt them and pay attention to the boilers immediately. Distance from boilers may not be greater than common walking time (maximum is 30 minutes – it will be determined by ITI inspector).
- 5) Each 6 months the unmanned operation system must be checked by a specialized competent organization authorized by the producer or importer of the equipment. A protocol about this check must be made and should be stored by the owner (operator).
- 6) For boilers quality of feeding and boiler water must be assured according to producer’s operational instructions for the boiler and in compliance with the standard ČSN 077401.
- 7) At a failure of the unmanned operation system, boilers will be operated with a permanent operator in accordance with the standard ČSN 070710.

The above-mentioned requirements are the basic conditions for the operation of the boiler room without a permanent supervision with periodic survey control. During approval of the unmanned operation they are further detailed, mainly requirements for professional qualifications of the supplier of the equipment and for the operational instruction of the boiler room.