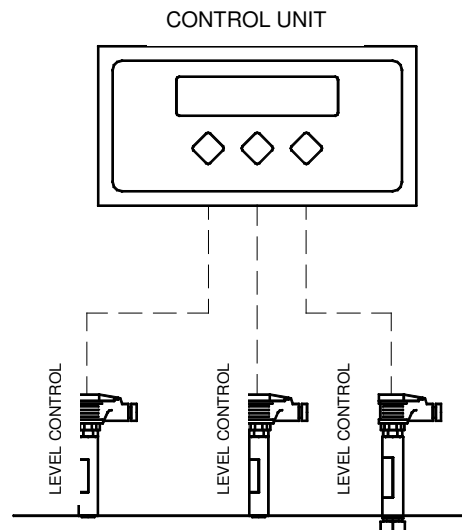


KL 28

## UNMANNED OPERATION – HOT WATER BOILER EQUIPMENT OF BOILERS FOR OPERATION WITH A PARTIAL SURVEY CONTROL



### Equipment of hot water and hot water system for a survey control

- 1) 2 systems (ITI approved) to watch a critical minimum level of water in the boiler
- 2) 1 system (ITI approved) to limit a minimum pressure of water in the boiler
- 3) 1 system (ITI approved) to limit a maximum pressure of water in the boiler
- 4) 1 system (ITI approved) to limit a maximum temperature of water in the boiler
- 5) reconstruction of gas burner automatics to control tightness of the intermediate piece of main gas safety valves and adjustment of gas burner automatics to allow an operational stopping
- 6) 2 systems (ITI approved) to watch a critical minimum level of water - expander
- 7) 2 systems (ITI approved) to watch a critical minimum pressure of water - expander
- 8) 2 systems (ITI approved) to watch a critical maximum pressure of water - expander
- 9) 2 systems (ITI approved) to watch a critical minimum level of water – feed tank
- 10) 1 system (ITI approved) to limit a maximum pressure of water – hot water system
- 11) a system alerting failures and shutting down boilers and hot water system with an adequate operator's location and activities (sound or light, pager, phone)
- 12) 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 gas in the boiler room (two-stage detection)
- 3) an emergency gas seal outside the boiler room enabling an automatic switch off from the 2<sup>nd</sup> stage of the gas leakage detection in the boiler room
- 4) a system indicating and alerting boiler room flooding with a link to the shutdown of gas burners of the boiler
- 5) 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
- 6) 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.