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LONG TERM STORAGE OF FUEL OIL IN THE NATURAL GAS ERA

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Environmental requirements caused many energy producing enterprises to switch from fuel oil to natural gas as a principle combustible to accommodate their energy needs. When natural gas is used as an energy source, the burners of the energy-producing units are of the dual kind and can use fuel oil as a combustible when necessary. This is because gas supply is switched off periodically during maintenance of gas pipes or equipment maintenance.

The fuel oil is kept in long-term storage close to the working site. This practice guarantees fuel oil supply in case of emergency shut down of natural gas lines.

When fuel oil is stored for a long period, deterioration processes can cause operational difficulties when there is a sudden requirement to switch to burning fuel oil. The changes in fuel quality materialize in physical and/or chemical properties.

As a result the fuel may not comply with specification requirements nor be compatible with the stipulations of the equipment producer.

The paper discusses the possible changes in pour point, water content, ash, and metal content during storage. Chemical changes in the intermolecular relationships of fuel oil, which can change viscosity and stability, are accounted for. Processes connected with fuel oil production causing change in fuel oil stability during long term storage are explained.

Finally, recommendations for optimal conditions for fuel oil storage and testing are suggested.