

**HIGH-TEMPERATURE WASTE REPROCESSING
WITH EFFECTIVE SYSTEM OF HEAT RECOVERY**

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С ЭФФЕКТИВНОЙ СИСТЕМОЙ УТИЛИЗАЦИИ ТЕПЛА**

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Description of solid sanitary and technogenic waste reprocessing technology; heat diagram of heat recovery of waste reprocessing process; description of facility operation fundamental modes; requirements to basic systems and materials of facility of TSIW (technogenic and sanitary industrial waste) high-temperature reprocessing; standard-technical documents according to which facility designing, building and operation is conducted are presented in the report. There have been demonstrated the capability for creation of facility of high-temperature sanitary and technogenic waste recovery. There have been selected structure materials with operation lifetime of not less than 10 years at the parameters obtained in the furnace. There have been shown that systems of heat-sink cooling with sodium coolant created in atomic energetic are applicable for heat recovery of melting furnace and outgoing gases in high-temperature sanitary and technogenic waste reprocessing facilities with bubbling flux bath.

The use of sodium coolant and modified heat balance reveal the following perspectives for sanitary and technogenic waste reprocessing facilities:

- application of oxygen blow instead of air. It will result in improvement of ecological indexes of process (decrease of NO_x content in outgoing gases);
- reduction of CO₂ quantity released in atmosphere, by its emission from stack effluent and return into furnace;
- application of hot filtration of furnace gas from dust;
- reduction of heat discharge into environment;
- reduction of slag intended for burial from 25 to 3 kg/t;
- provision of higher efficiency factor (to 40%) in the course of power generation. Efficiency factor for existing systems of melting facility heat recovery < 30%;
- support of higher protection level of facility.

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