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IMPROVEMENT OF THE LEVEL OF CONTROL AND MONITORING OF THE RESERVOIR PRESSURE MAINTENANCE SYSTEM THROUGH CREATION OF THE UNIVERSAL MODEL

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- № 3, 2016

52

j.) (q_i

 $\Delta p'_i$ r,

$$\sum_{r} \Delta p'_{i} = \sum_{r} f_{i}(q_{i}) = P_{rb} - P_{re} + \sum_{r} \Delta z_{i}, \qquad (4)$$

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$$(r; -$$

, P_{re}), $(P_{rb} -$

« » Р. P

$$\overline{Y}$$
, \overline{P} \overline{Z}



<u>53</u>





№ 3, 2016

$$(10) \qquad A \cdot \overline{S'} (\overline{p}, \overline{v}) = 0. \qquad (11) \\ S'_{i}(p_{k}, p_{k}, z_{k}, z_{k}) \\ i \qquad i \qquad k, \qquad (-1). \\ T_{i} \qquad F_{i} \\ \oplus \underbrace{AI = F_{i} \qquad AI = F_{i} \qquad AI = F_{i} \qquad AI = F_{i} \qquad AI = F_{i} \\ F_{i} \qquad F_{i} \qquad F_{i} \qquad F_{i} \qquad F_{i} \qquad F_{i} \\ F_{i} \qquad F_{i} \qquad F_{i} \qquad F_{i} \qquad F_{i} \\ F_{i} \qquad F_{i} \qquad F_{i} \qquad F_{i} \qquad F_{i} \\ F_{i} \qquad F_{i} \qquad F_{i} \qquad F_{i} \qquad F_{i} \\ F_{i} \qquad F_{i} \qquad F_{i} \qquad F_{i} \qquad F_{i} \\ F_{i} = F_{i} + F_{i} \\ F_{i} \qquad F_{i} = F_{i} + F_{i} \\ F_{i} = F_{i} + F_{i} \\ F_{i} = F_{i} = F_{i} + F_{i} \\ F_{i} = F_{i} - F_{i} \\ (1) \qquad F_{i} = F_{i} - F_{i} \\ (1) \qquad F_{i} = F_{i} - F_{i} \\ (1) \qquad F_{i} = F_{i} - F_{i} \\ F_{i} = F_{i} \\ F_{i} \\ F_{i} = F_{i} \\ F_{i} \\$$

№ 3, 2016

<u>56</u>

№ 3, 2016

57

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$$\begin{split} k \\ T_{l_{k,1}} = T_M + (T_{l_k} - T_M) e^{\frac{\Psi F}{M_k C_k}}, \\ T_M - i k; \gamma - i$$

№ 3, 2016

<u>58</u>

$$\begin{cases} \tau_{1}(T_{k1\in I}, T_{k2\in I}, ..., T_{kn\in I}) = \frac{\sum_{k\in I}^{n} |M_{i\in k}| \cdot [T_{k} + \theta_{i\in k}(M_{i\in k}, T_{k})] + x_{1}\varepsilon_{1}}{\sum_{k\in I}^{n} M_{i\in k} + x_{1}} \\ \vdots \\ \tau_{m}(T_{k1\in m}, T_{k2\in m}, ..., T_{kn\in m}) = \frac{\sum_{k\in m}^{n} |M_{i\in k}| \cdot [T_{k} + \theta_{i\in k}(M_{i\in k}, T_{k})] + x_{m}\varepsilon_{m}}{\sum_{k\in m}^{n} M_{i\in k} + x_{m}} \end{cases}$$
(15)

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 $H(l) = \text{const} = 5^{0}\text{C}.$



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, 2007. – 664 . ». – .,1985. – 276 . 2002611864. (Hydra'Sym). – ., 2002. -

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