

Estimation of worker encouragement system at industrial enterprise

Estimación del sistema de estímulo a los trabajadores en una planta industrial

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ABSTRACT:

The article describes the current system of awarding bonuses to employees of primary and secondary production in an industrial plant, as well as administrative staff. The estimated execution plan for monetary material incentives of employees in the reporting year. Based on the calculation of indicators of labour productivity dynamics and growth of the average wage level determined compliance of labour productivity, the level of wages.

Keywords: Wages, incentives, salaries, bonus system, encouraging awards, wage fund

RESUMEN:

El artículo describe el sistema actual de adjudicación de bonos a los empleados de producción primaria y secundaria en una planta industrial, así como al personal administrativo. El plan de ejecución estimado para los incentivos de material monetario de los empleados en el año de informe. Con base en el cálculo de los indicadores de la dinámica de la productividad laboral y el crecimiento del nivel salarial promedio determinó el cumplimiento de la productividad laboral, el nivel de los salarios.

Palabras clave: Salarios, incentivos, salarios, sistema de bonificaciones, incentivos alentadores, fondo de salarios

1. Introduction

Encouragement is essential in organization of industrial enterprise's activity, as it promotes setup of high-quality and efficient work process, which eventually cuts down expenses for organization of production process by the employer, labour remuneration, and leads to increase of profit.

Encouraging awards are paid for encouragement of highly skilled work. This kind of payments includes bonuses, awards following work results over the year, allowances, and other payments caused by personal qualities of the worker.

In material bonus, the share of payments according to results of company's economic activity increases. Thus, special attention is drawn to promotion of personnel's corporate

thinking.

As social relations in a society develop, the workers' needs vary. In the modern economy, the value of social privileges and moral incentives grows compared to material factors. Therefore, encouragement of the personnel should not be limited to material bonuses. In the modern economy, encouragement is aimed at formation of worker's interest in enterprise's performance and personal improvement.

Economic reforms in Russia feature growth of requirements of the public groups. Generation of efficient encouragement system gains special topicality for the upper echelon. At the same time, the existing encouragement system should be estimated, reserves and ways for improving its efficiency should be found, and the further monitoring should be carried out.

2. Methodology

Work encouragement is divided into material and moral components. The main forms of material encouragement are wages, allowances, and bonuses according to results of enterprise's activity. Wage is a key factor influencing the choice of job; therefore, wages should be competitive. However, sometimes it can constrain increase of labour efficiency. Therefore, bonuses with constant ratios that do not consider enterprise's activity results prevail. Besides, material encouragement includes privileges, like paying for the way to job, meals, provision of interest-free loans, sale of products to employees at reduced prices, insurance, and additional payment for work experience. Internal privileges serves as effective tool of encouragement and prove care of the enterprise about its employees.

Forms of moral encouragement include training, paying for advanced professional training courses, promotion. This kind of encouragement is perfect for young, active, and mobile workers. However, many Russian enterprises do not have clear promotion system; therefore, workers do not understand what they have to do to get promotion.

Analysis of manpower encouragement efficiency is applied for estimation of expenses and encouragement system's impact on increase of profit, production volumes, reduction of product cost price, and improvement of labour efficiency.

The sets of indicators will obviously vary for different categories of workers and industries. We would like to examine indicators applied for estimation of oilfield service enterprise encouragement systems.

As a rule, sociological studies based on questionnaires of worker's satisfaction with wage level, nature, and conditions of work, as well as moral encouragement forms are used as generalizing indicator. Questionnaires are often anonymous and meant for reflection of overall sentiments of workers and acquisition of information on satisfaction with moral encouragement forms.

Questioning may not reflect the real situation at the enterprise, especially if the management adheres to authoritative management style, which is actually a common case for oil&gas and oilfield service industries.

As a rule, quantitative indicators are used for analysis of material encouragement and require several approaches to estimation of its efficiency.

The most popular way is encouragement of innovations, which consists in bonuses for reasonable proposals aimed at reduction of expenses and getting additional profit. It can be applied in any industries.

In practice, intensity and labour efficiency indicators are considered together with wages fund, which often forms the biggest expense item. Besides, indicators, like wages fund saving and ratio of work efficiency increase to average wage increase are analyzed too.

Analysis of wages fund starts with determination of absolute and relative deviation of its actual size from the planned one.

$$WF_{\text{absolute deviation}} = WF_{\text{actual}} - WF_{\text{planned}}, \quad (1)$$

where, WF_{actual} , WF_{planned} - actual and planned wages fund, respectively.

Relative deviation of wages fund can be calculated using the following formula:

$$WF_{\text{relative deviation}} = WF_{\text{actual}} - (WF_{\text{planned, variable part}} * K_{\text{plan execution}} + WF_{\text{planned, constant part}}), \quad (2)$$

where, $WF_{\text{planned, variable part}}$, $WF_{\text{planned, constant part}}$ - variable and constant part of planned wages fund, $K_{\text{plan execution}}$ - plan execution – plan execution ratio.

Thus, variable part of wages fund should be corrected with the ratio of execution of the output plan.

Enhancement of production efficiency obviously requires more rapid growth of labour efficiency compared to increase of average wages.

Change of average wages over a certain period can be calculated by its index:

$$I_{AW} = \frac{AW_{\text{actual}}}{AW_{\text{planned}}}, \quad (3)$$

where I_{AW} – index of average wage change;

AW_{actual} - actual average wage of workers, in money terms;

AW_{planned} - planned average wage of workers, in money terms;

$$I_{LE} = \frac{LE_{\text{actual}}}{LE_{\text{planned}}}, \quad (4)$$

where I_{LE} - index of labour efficiency change;

LE_{actual} - actual labour efficiency level;

LE_{planned} - planned labour efficiency level.

Lead ratio makes:

$$R_{\text{lead}} = \frac{I_{LE}}{I_{AW}}, \quad (5)$$

The amount of saving or overexpenditure of the wages funds of industrial enterprise workers as a result of changing the average wage and labour efficiency over the reporting period can be calculated using the following formula:

$$S = \frac{WF_{\text{actual}}(I_{AW} - I_{LE})}{I_{AW}}, \quad (6)$$

where, S – amount of saving or overexpenditure of the wages fund for industrial enterprise workers.

Taking into account inflation, the index of rise in prices for consumer goods and services should be considered when drawing up average wage growth plan:

$$I_{AW} = \frac{AW_{\text{actual}}}{AW_{\text{planned}} * I_{\text{rise in prices}}}, \quad (7)$$

All measures on personnel encouragement that are carried out by oil&gas and oilfield service enterprise's top management should be aimed at eventual increase of profit.

3. Research

The issue of personnel encouragement system estimation is examined on the example of department of the international oilfield service company and, namely, a pump production plant. At the enterprise under consideration, material encouragement of workers is carried out according to Regulations on bonus plan for the key results of economic activities. These Regulations were drawn up for improving the quality of produced goods, enhancing the operational discipline, and establishing direct dependence of every worker's wage on overall enterprise's performance.

Bonuses for core and auxiliary workers of the main enterprise are calculated on the basis of economic activity results and paid from the wages fund. They key indicators for allocation of bonuses are execution of output plan in a workshop and operational discipline.

The report on execution of output plan in a workshop should be drawn up by planning and analytic department and submitted to the personnel management department for further awarding of bonuses on the basis of this indicator till 10th day of every month following the reporting month. The maximum size of bonus for this indicator makes 25%. Should the workshop fail to comply with the plan, the bonuses should be awarded according to below mentioned table (table 1):

Table 1
Size of bonus according to execution of the output plan

Indicator	Value, %
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Execution of the output plan	75 and below	76- 85	86 - 95	96 -100
Bonus amount	0	5	10	20

Operational discipline is a personal indicator of every specific worker. This indicator includes labour, production, and industrial discipline, execution of orders and instructions at the enterprise as a whole and in a specific department. The maximum size of bonus for this indicator makes 10%. 2% amount is subtracted for every violation. Thus, orders, instructions, and office memos of workshop and site heads serve as the basis.

The enterprise workers are awarded monthly, on the basis of statistic and accounting reports. The workers who missed the work without good reason or committed another gross violation are deprived of the bonus for a specific reporting period.

Workshop commissions are created for crude summarizing of data on every worker. Interim results are submitted to personnel management department by 15th day of every month following the reporting month. Employees of the department check up the documents and submit them to the plant's balance commission which examines and approves them, or makes a different decision. The balance commission is created for estimation of technical and economic indicators of enterprise's activity.

The worker can be deprived of the bonus, in full or in part, for the period when they have failed to comply with the plan or committed some violation. Newly employed workers do not receive the bonus in the first month. Temporary workers or by-workers, as well as workers, who quitted the job at their request, do not receive the bonuses. The workers who have not worked the full month due to transfer to other post or department, retirement, or other reasonable grounds receive the bonus for actual period of work in the reporting period.

Personnel management department supervises registration of bonuses.

Regulations on awarding (Afanaseva L.N., Bogatyrevich N.S., 2011) should be introduced at the enterprise for enhancement of material interest of the heads, senior specialists, technicians and engineers, workers in improvement of work quality, profit increase, labour efficiency increase, and improved functioning of service and other sectors of the enterprise. Management at the enterprise should receive bonuses allocated from the wages fund, on the basis of the main and additional indicators:

- execution of output plan for specific range of goods;
- execution of cost price plan;
- revenues received from sold products according to financial plan;
- timely delivery of raw materials;
- timely reporting;
- absence of deficit spending according to financial plan;
- introduction of new equipment;
- execution of profit plan.

Estimation of compliance with the plan on structure and amount of bonuses for all categories of workers in the basic and reporting periods is specified in table 2.

Table 2

Compliance with the plan on material encouragement of the enterprise workers in the reporting period, USD

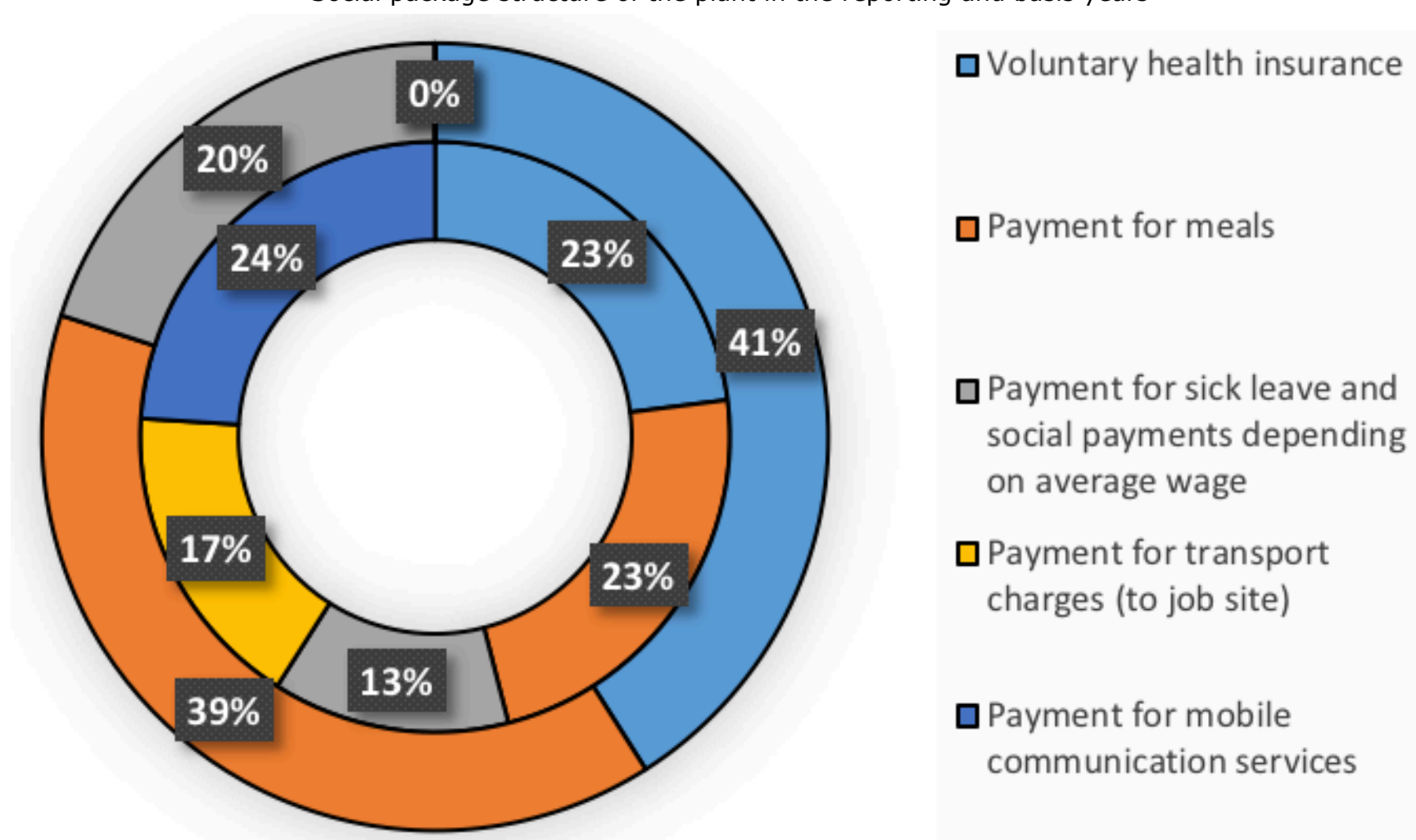
Indicator	Plan	Fact	Absolute deviation	Relative deviation, %
General fund of bonuses for production workers	204933	85267	-119667	-58
incl. for execution of output	156800	47767	-109033	-70

plan				
for operational discipline	48167	37533	-10633	-22
General fund of bonuses for heads and experts	144567	75900	-68667	-48
incl. for achieved personal results	108433	41733	-66700	-62
according to overall performance of the enterprise	36133	34167	-2000	-6
Total	349533	161167	-188367	-54

Alongside with money, material encouragement of the plant's workers includes company's expenses on social package. Plant's social package structure in the reporting and basic periods is specified in figure 1.

Fig. 1

Social package structure of the plant in the reporting and basis years



Significant share of enterprise's social package is taken by voluntary health insurance of workers both in basic and reporting years (23% and 41%, accordingly). Besides, considerable amount is allocated for payment for worker's meal and sick leave, depending on the average wage. Above listed components of the social package are allocated for all categories of employees over the examined period, unlike mobile communication services of management and senior specialists which has the greatest relative share in the social package structure in the basic year - 28% - and was not included in the social package of the reporting year at all, same as payment for transport charges to the job site. These changes in the structure of additional services package are caused by significant decrease in

demand for the plant's products, reduction of staff, and cutback of expenses for personnel. The condition allowing to acknowledge bonus system as efficient one consists in its interrelation with tasks on support of the required labour efficiency increase and average wage ratio, ratios in structure and conditions of labour remuneration for specific categories of workers. The following prerequisites should be provided:

- compliance of the set bonus indicators to objectives of the enterprise or its departments and possibility to change the level of compliance with these indicators as a result of workers' labour efforts;
- correct selection of initial encouragement basis which sets the rate of compliance with bonus indicators;
- focus on material interest of workers in the required field;
- reasonable amount of bonuses;
- correct selection of workers who will be awarded the bonuses. (Yakovlev R.A., 2014)

The examined bonus system is not progressive enough. Bonus indicators do not comply with specific features and objectives of the enterprise. One of the key principles of oilfield service enterprise's activity is the ultimate quality, which is reflected in the absence of defects. Therefore, the bonus indicator based on the work quality or reduction of rejects rate should be introduced for support of efficient operation and product quality improvement. However, the current system does not contain this indicator. Compliance with production technology, absence of any deviations, and the extent of attaining the set goals by the workers should be considered as well. Besides, the size of bonuses for execution of product range plan does not match with the percent of execution of this plan objectively.

Correct organization of wages has a direct impact on labour efficiency increase rates, while promoting professional improvement of workers. Wages, being traditional work promotion factor, exerts the dominating impact on performance. The management should closely tie wages and promotion with labour efficiency indicators and output plan in order to ensure stable improvement of performance (Frolova T.A., 2011).

The indicators of labour efficiency calculated on the basis of data provided by the industrial enterprise are specified in table 3.

Table 3
Labour efficiency indicators

Indicator	Plan	Fact	Deviation
Annual average wage of 1 worker, USD	6274	5314	-960
Annual average wage of 1 employee, USD	7802	6895	-907
Labour efficiency, RUB/man	30	25	-5
Labour efficiency of workers, USD/man	43	36	-7
Worker wages fund, thous. USD	759202	457004	-302198
General wages fund, thous. USD	1326317	841225	-485091

Labour efficiency plan is underfulfilled by 5.06 USD/man at the enterprise as a whole, and by 6.76 USD/man in the section of workers. This situation develops on the background of the general decrease of enterprise's business activity and underfulfillment of the basic indicators plan and does not provide correct interpretation of efficiency of funds spent for labour remuneration. Therefore, relative indicators of changing the labour remuneration funds and efficiency should be calculated and compared.

Calculated values of the listed indicators based on the actual data of the examined industrial

enterprise are specified in table 4.

Table 4
Correspondence of labour efficiency to wages

Indicator	At the enterprise as a whole	For workers
Index of average wage change	0.88	0.85
Index of labour efficiency	0.83	0.84
Lead ratio	0.94	0.99
Overexpenditure of wages fund, thous. USD	48.03	2.97

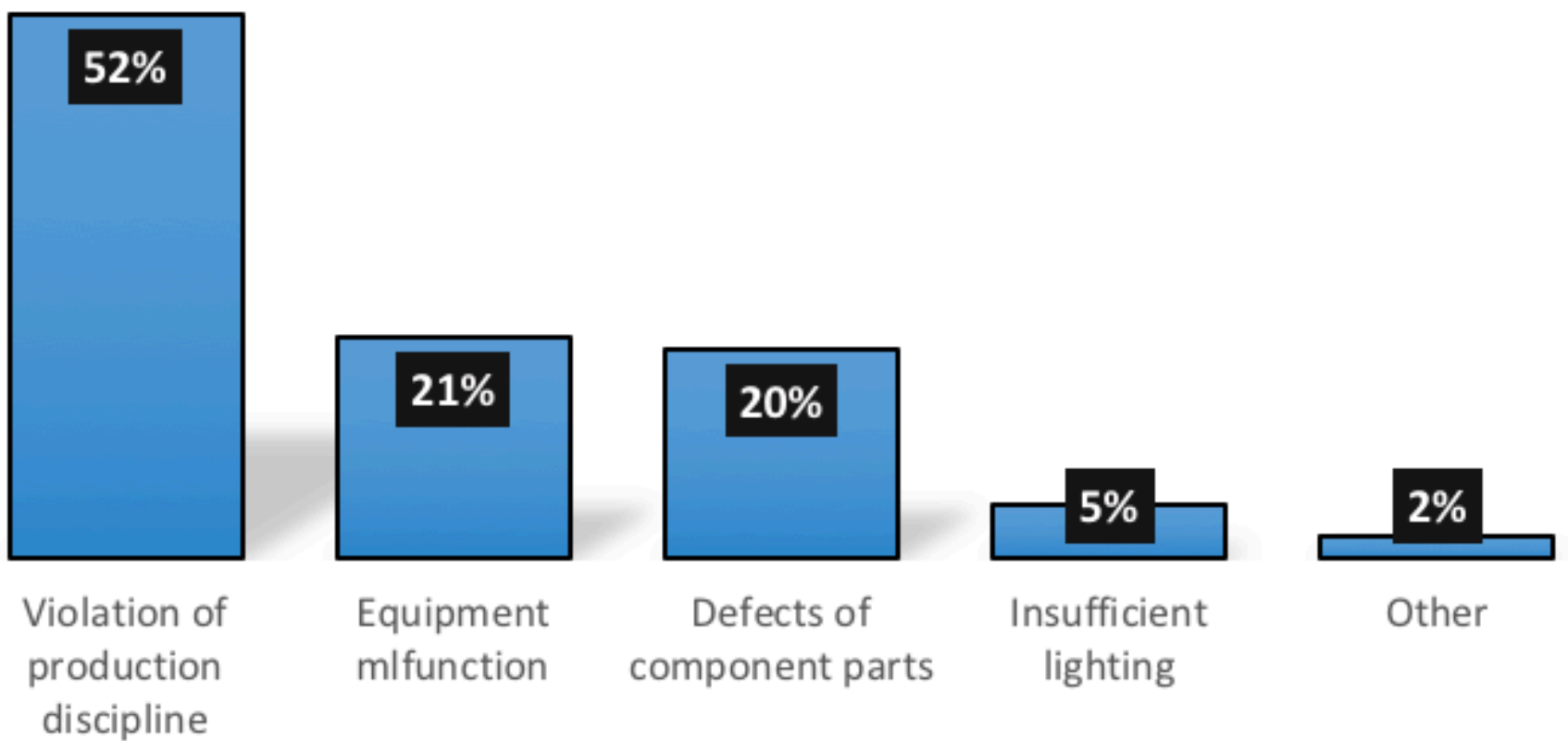
Alongside with quantity indicators of the enterprise's activity, especially of the international company's plant, support of high product quality is another one essential goal. Product quality indicators are specified in table 5.

Table 5
Plant product quality indicators in the basis and reporting years

Indicator	Basis year	Relative share in gross output	Reporting year	Relative share in gross output	Deviation of the reporting year from the basis year	
					by absolute value	by relative share
Cost of final (irreparable) reject	123	0	99	4	-23.6	+0.83
Expenses for correction of rejects	66	0	61	2	-5.4	+0.71
Absolute share of rejects, total	189	0	160	6	-29	+1.52
Gross output by cost price	4419	-	2752	-	-1667	-

The main reasons which caused this growth were revealed according to results of internal quality system audit (Fig.2).

Figure 2
Pareto chart (reasons of rejects) for the reporting year



4. Results

The above mentioned data (table 4) show that average wage reduction rate at the examined industrial enterprise fail to keep up with labour efficiency reduction rate at the enterprise as a whole (12 and 17%%, accordingly). Reduction of average worker wage in the reporting period occurred at almost the same rate as the reduction of worker's labour efficiency (15 and 16 %% , accordingly); the lead ratio makes about 1 (0.99). Therefore, there is a problem in estimating the compliance of non-production employees' labour efficiency to funds spent for their labour remuneration. The lead ratio shows that average wage increase rate at the enterprise as a whole exceeds the labour efficiency increase by 6%; thus, overexpenditure of wages fund made 48034.65 dollars. Taking into account application of time-rate labour remuneration combined with low labour efficiency, the enterprise faces the risk of increase in expenditures.

In this case, the enterprise management should take steps to improve the labour remuneration system and create the conditions, so that labour efficiency growth would take the lead over wages growth rate when planning of enterprise's activity and drawing up the budgets.

Growth of rejects relative share according to the results of internal quality control and namely expenses for correction of rejects in the general cost price of products (table 5) is one of the negative trends revealed at the examined plant.

Despite the absolute reduction of all rejects indicators, the share of rejects in cost price of gross output has increased by 1.52% in total.

Violation of production discipline by industrial workers (52% of the total amount) is the main cause of rejects at the examined industrial enterprise. This is partially caused by focus of material encouragement system not on qualitative, but on quantitative indicators. The existing bonus system should be changed and focused not on volume indicators, but on labour efficiency and quality of products.

5. Conclusion

The presented set of indicators for analysis of encouragement system efficiency is recommended for application at oil&gas and oilfield service enterprises. Besides, this set can be used in machine-building branch and other industries with product quality serving as the priority factor influencing financial results and overall success of the enterprise.

Analysis of the current labour remuneration system at the examined enterprise has revealed the following flaws: inconsistency of labour efficiency level and wages level, inefficient use of

wages fund, biased approach to estimation of non-production employees' labour efficiency, inefficient bonus system for workers.

Questioning was not carried out due to authoritative style of control over industrial enterprise applied by the top management. It is recommended to the enterprise to develop moral forms of encouragement aimed at creation of favourable atmosphere among workers, elimination of status and administrative barriers. This will have beneficial effect on financial and economic activity of the enterprise, since the employees will feel support and mutual understanding in team, which eventually enhances the labour efficiency.

References

- Afanaseva L.N., Bogatyrevich N.S. (2011). Some issues of labour remuneration improvement in the building sector. Information and management technologies: Collection of scientific articles / State educational institution "Institute of information and management technologies" of the Belarusian State University. – Ed.2, pp. 264-267.
- Yakovlev R.A. (2014). Labour remuneration at the enterprise. – M.: Economics and marketing center, pp. 448.
- Frolova T.A. (2011). Company economics: lectures. – Taganrog: TTI SFU. Retrieved from: <http://www.aup.ru/books/m217/>
- Savitskaya, G.V. (2005). Economic analysis: textbook / G.V. Savitskaya. — 11th ed. rev. and ext. – M.: Novoye znanie, pp. 651.
- Federal Law "On Amendments to the Labor Code of the Russian Federation" dated June 18, 2017 No. 125-FZ (last version). Retrieved from: http://www.consultant.ru/document/cons_doc_LAW_218170/
- Armstrong M. (2012). Strategic management of human resources. - Moscow: INFRA-M, pp. 328.
- Vesnina V.R. (2013). Practical personnel management: allowance for personnel work - M.: Yurist, 2013. pp. 495.
- Galenko V.P., Strakhova O.A. (2013). Faybushevich SI Personnel Management and the efficiency of enterprises. - Moscow: Berator, pp. 168.
- Gutgartz R.D. (2012). Evolution of approaches to the problem of personnel management enterprises // Management in Russia and abroad. - No. 5: 105-117
- Samoukina N.V. (2011). Personnel management: Russian experience - SPb.: Peter, pp. 236.

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