the form of the system. Using the results of interviews with the enterprise staff as a source of information for networking processes may be accompanied by subjectivism, non-systematic presentation of information, may be time-consuming. Against this background the first method of using technical regulatory legal acts was chosen as a source of information for constructing process diagrams of operation of the linear part of the main pipeline.

At the same time processes construction language (IDEF0) lacks such an element as an opportunity to define objects' attributes. Thus the constructed model of operation of the linear part of the main pipeline serves as an information basis for further analysis and evaluation of the integral risk of the whole process.

REFERENCES

1. Repin, V.V. Process approach to management. Modeling of business-processes / V.V. Repin, V.G. Eliferov. – M. : RIA "Standards and quality", 2008.
2. Systems of quality management. Requirements: STB ISO 9001-2006. – Minsk : BelGISS, 2006.
3. Systems of quality management. Main basics and vocabulary: STB ISO 9000-2006. – Minsk : BelGISS, 2006.

UDC 648.12.452

SAFETY MANAGEMENT OF PROCESSES IN THE MAIN PIPELINE TRANSPORT

ALIAKSEI LUKASHONAK, ALIAKSEI VARONIN
Polotsk State University, Belarus

It was suggested to create a fund of technical regulatory legal acts that would allow to increase the safety of processes in the main pipeline transport.

It is necessary to carry out quantitative risk evaluation in the main pipeline transport to identify hazardous processes and to draft arrangements that will help to prevent hazards. This approach should be implemented in the safety management system of processes in the main pipeline transport.

Different control and safety systems can be distinguished. In the technical regulatory legal acts of the Republic of Belarus such concepts as total safety system, products safety management, flights safety management system, information safety system, fire safety system.

One of the most urgent tasks in the main pipeline transport is the management of industrial safety due to the fact that industrial hazard is the characteristic of this means of transport. The requirement to establish safety management systems are stated in Russian technical regulatory legal acts.

Safety work [1], environment [2] and quality control [3] management systems are the closest to each other in relation to content and requirements adequacy. They are part of the overall management system which includes planning, responsibilities, methods, procedures, processes, resources.

Due to the fact that security is one of the quality indicators and service hazard arises in processes, safety management system of processes must be considered in the framework of service quality management system which uses a process approach. Management responsibility, resource management, life cycle processes, measurement, analysis and improvement are the basic elements in the model of the quality management system. This model is based on the methodology known as the Deming Cycle PDCA [4] which represents an iterative sequence of operations such as planning, implementation, verification, i.e. actions that will lead to continuous improvement.

As shown in the model of quality management system and in Deming Cycle the most important processes are those which are carried out by senior management. Therefore from the entire list of processes responsible management and planning are in the first place. Within these processes senior management sets policies and objectives, ensures the implementation of the required processes, provides resources, analyzes and makes decisions on improvement measures.

Executing senior management decisions passes through information channels by means of documented control actions. Documentation conveys the idea of the decision and the sequence of actions that must be done in the implementation of decisions of the senior management.

Controlling actions by means of documentation may be transmitted through external and internal information channels. The external information channel contains documentation which is worked out by the government. The internal channel includes documentation which is worked out within the company on behalf of senior management.

Attaining quality and value to products or service value takes place in the processes of a lifecycle. At the same time in the processes of lifecycle the loss of quality in the form of hazard formation which arises from the

influence on raw materials by means of mechanisms of controlling actions. In this case the process of the incoming raw materials, raw materials changing mechanism, controlling action and output in the form of products or service can be regarded as a model of hazard formation.

In this case the process of the life cycle at the provision of service as well as other processes is regulated by entrance into process management, i.e. controlling action. Consequently entrance into the process management plays the most important role in attaining quality to products or service and at the same time the loss of quality products or service which means hazard formation. All components of the process, personnel actions, mechanisms work, parameters of incoming raw materials and outcoming products or service are under the influence regulatory documents.

Thus competently elaborated regulatory acts allow avoiding accidental situations in the main pipeline transport. Taking into account the priority of regulatory acts in providing safety, accidental situations which occur in the main pipeline transport indicate the need to improve the existing technical regulatory legal acts. Accidents may occur due to poor elaboration of requirements for processes, lack of some requirements for processes or lack of the whole technical regulatory legal act for the process.

To reveal the lack of technical regulatory legal act for a number of processes in the main pipeline transport is possible be means of compiling a total database of technical regulatory legal acts and their systematization according to legal status, life cycle processes, the type of transported product, object localization.

At present there is no documented system of views with priorities of standardization and ways of improvement of present fund of technical regulatory legal acts in the main pipeline transport. The creation of this documented system would allow increasing safety of processes in the main pipeline transport.

REFERENCES

1. Systems of management of labor protection. Requirements: STB 18001-2009. – Minsk : BelGISS, 2009.
2. Systems of management of environment. Requirements and guidelines for application: STB ISO 14001-2005. – Minsk : BelGISS, 2006.
3. Systems of quality management. Main basics and vocabulary: STB ISO 9000-2006. – Minsk : BelGISS, 2006.
4. Repin, V.V. Process approach to management. Modeling of business-processes / V.V. Repin, V.G. Eliferov. – Moscow : RIA "Standards and quality", 2008.

UDC 621.9.04

STIFFNESS OF BLOCK-MODULAR CUTTING TOOLS

ANDREY MAKSIMCHUK, NIKOLAY POPOK
Polotsk State University, Belarus

The results of experimental studies of clamping mechanisms stiffness are presented, recommendations to improve clamping system are given.

Reliability of prefabricated cutting tools is determined to a large extent by the reliability of fixing plates in the housing. There are several structures of clamping mechanisms according to the working conditions of cutting tools and peculiarities of their manufacture [1, 2]. The existing systems of cutting plates fixing are shown most thoroughly in [3, 4, 5]. These systems reflect the current trends in the designing of cutting tools: high precision of cutting plates manufacturing, closed grooves precisely manufactured to place cutting plates, cutting plates clamping mechanisms with a minimum number of structural elements, such as a screw or a lever. Implementation of such systems in terms of domestic tool production is not always possible, as it requires special equipment and precise high-quality components. Therefore, it is urgent to establish a system of cutting plates fixing that is efficient for domestic production conditions and is not inferior in reliability to the best foreign systems.

During the experimental verification of the obtained calculation data the displacement values of cutting plate and those of a strap were fixed at different points for different clamping forces of the screw (figure 1). In particular, the displacement values of the cutting plate (pos.5) in the tangential, radial and axial directions were measured by indicators (pos. 1, 2, 3). The displacement values of the strap (pos. 6) were measured by indicator (pos. 4). The clamping force of the screw (pos. 8) was created by a torque wrench (pos. 9).