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STANDARD

Requirements for the Organization and Conduction of Industrial Safety Inspection in the Structural Subdivisions of Ilim Group JSC

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1. DOCUMENT PURPOSE

This Standard establishes a unified procedure for conducting industrial safety inspections in the structural subdivisions of Ilim Group JSC.

2. SCOPE OF APPLICATION

This standard is mandatory for use by specialists of the HSE and Industrial Safety Directorates of the branches of Ilim Group JSC. The branches of Ilim Group JSC, in agreement with the HSE and Fire Safety Directorate of the Head Office and based on this Standard, can develop internal local regulatory documents on the organization and conduct of industrial safety inspections in accordance with the organizational structure of the branch, the list of quantities, and types of technical devices. Organizational, administrative, and local regulations issued in the branches shall not contradict the regulatory and technical documentation (RTD) in the field of industrial safety and this Standard. Local regulations of the branches shall be approved by the relevant orders of the director of the branch of the Company.

3. REGULATORY REFERENCES

When developing this Standard, the requirements of the following internal and external regulatory documents as presently in effect were taken into account:

- FZ-116 On Industrial Safety of Hazardous Production Facilities;
- FRR Safety Rules for Chemically Hazardous Production Facilities;
- FRR Safety Rules for the Production of Chlorine and Chlorine-Containing Media;
- FRR General Explosion Safety Rules for Explosion and Fire Hazardous Chemical and Oil Refining Industries;
- FRR Safety Rules for Hazardous Production Facilities Using Hoisting Machinery;
- Guidelines for Inspection of Enterprises (Owners) Operating Hoisting Machinery (RD 10-89-95);
- Guidelines for the Inspection of Enterprises Operating Steam and Hot Water Boilers, Pressure Vessels, and Steam and Hot Water Pipelines (RD 10-16-92);
- Guidelines on the Procedure for Monitoring Compliance with Industrial Safety Requirements at Gas Distribution and Gas Consumption Facilities (RD 13-01-2006);
- Federal rules and regulations in the field of industrial safety Rules of Industrial Safety of Hazardous Industrial Facilities Which Use Equipment Operating Under Excessive Pressure;
- Regulations on Supervisory and Monitoring Activities in the System of Gosgortekhnadzor of Russia (RD 04-354-00).

4. GENERAL PROVISIONS

4.1 Industrial safety (IS) inspection is one of the effective forms of work to improve the employees' work conditions and safety, the state of industrial safety.

4.2 IS inspection (hereinafter, the inspection) is carried out with the purpose of:

- prevention of accidents and industrial injuries;
- formation of the IS Risk Register of the branch;
- inspection of compliance with the requirements of the Federal Rules and Regulations (hereinafter, the Safety Rules), the implementation of a set of measures aimed at ensuring the safe operation of hazardous production facilities and the prevention of accidents and incidents at such facilities, ensuring readiness for localization of elimination of their consequences.

4.3 Requirements for IS are regulated by regulatory documents (RD) included in the "List of external RDs", as well as in the "List of internal RDs" of branches.

4.4 The inspections shall be conducted by engineers of technical supervision departments, services, and production control departments (hereinafter, department engineers) with the participation of SSD leaders and responsible persons (or their deputies). Depending on the type of inspection, experts of the inspected subdivision, an industrial safety engineer, and specialists of departments and services

of the relevant branch may be involved in its implementation.

4.5 Inspection of previously issued instructions shall be carried out by engineers of departments (services), if necessary, together with the head of the department after submitting a report on the implementation of the instructions.

5. INSPECTION CLASSIFICATION

5.1 Inspections may be scheduled, extraordinary, targeted, and operational.

5.2 **Scheduled inspections** are carried out in accordance with the approved annual and monthly work plans of departments and technical supervision services (production control) (hereinafter, department). Scheduled examinations include:

- inspection of the activities of the safety subdivision when operating technical devices and
- assessment of the actual state of industrial safety and compliance with regulations on industrial safety in the subdivision.

5.3 **Unscheduled (extraordinary) inspections** are carried out by order of the HSE and Industrial Safety Department head or Director, as well as the HSE and Fire Safety Director of the HO, in accordance with the tasks established, and (if necessary) based on the results of instructions of external supervisory authorities, in case of changing legislative requirements, after accidents and incidents, and emergencies.

5.4 **Target inspections** are carried out by order of the HSE and Industrial Safety Department head or Director, or according to the approved annual and monthly work plans of the department for a more in-depth study of certain IS issues. Target inspections are carried out in respect of:

- individual sections (condition of certain technical devices of HIF and technologies for performing works or devices);
- certain issues on the organization of works (compliance with the permit to work system, personnel training, etc.).

Target inspections may be carried out outside the approved work plan of the departments; in this case, the head of the SSD must provide an accompanying employee of the SSD to conduct an inspection with the engineers of the departments (services).

5.5 **Operational inspections** – a scheduled or unscheduled industrial safety inspection conducted by an engineer of a department (service) along the intended route within one day.

5.6 Inspections may be carried out:

- in one or several main areas in accordance with Clause 6.1;
- by one or more criteria in accordance with Sections 7–28.

6. INSPECTION AREAS

6.1 IS inspection is carried out in the following main areas:

- technical documentation analysis;
- technical condition and safe operation of steam boilers;
- technical condition and safe operation of pressure vessels;
- technical condition and safe operation of steam and hot water pipelines;
- technical condition and safe operation of filling stations and test points of bottles;
- technical condition and safe operation of hoisting machinery (hoisting cranes and their gantry rails, hoists, and towers);
- technical condition and safe operation of elevators;
- technical condition and safe operation of process pipelines;
- technical condition and safe operation of tanks and vessels operating in an inorganic acid and alkali environment;
- technical condition and safe operation of the tanks and vessels of the warehouses of fuels and lubricants (FL);
- technical condition and safe operation of gas facilities;
- safe operation of buildings and structures;

- personnel qualification, awareness, implementation of previously issued instructions of services and departments in the field of industrial safety, and implementation of decisions of external supervisory bodies.

7. BASIC CRITERIA WHEN ANALYSING TECHNICAL DOCUMENTATION

7.1 When reviewing the technical documentation, the availability of the following documents shall be checked:

7.1.1 As regards steam boilers:

- certificate with appendices (for each facility);
- manufacturer's manual for installation and operation;
- document on the conduct and schedule of preventive maintenance;
- operational (shift) log;
- technical guidelines for personnel servicing boilers developed on the basis of the manufacturer's manual for installation and operation of the boiler, taking into account the layout of the equipment and local operating conditions;
- instructions for maintaining the water-chemical regime and operating manual for the installation(s) for pre-boiler water treatment with performance chart; log (statements) for water treatment;
- log for the control check of pressure gauges;
- instructions, schedule, and log (report) for maintenance and checks of alarms and automatic protections working order;
- instructions for conservation;
- conclusions of expert organizations confirming the possibility of operating boilers the specified service life of which has expired.

The availability and content of documents based on the results of monitoring and control of the metal of boilers and their pipelines shall be checked.

7.1.2 As regards pressure vessels:

- certificates with appendices;
- manufacturer's manual for installation and operation;
- instructions for the operating mode and safe maintenance of vessels compiled on the basis of the manufacturer's manual for installation and operation (instructions in the design documentation) taking into account local conditions;
- operational (shift) log;
- documents on the results of monitoring the speed and uniformity of heating and thermal displacement of the vessel in cases where such control is provided for by the Rules or the manufacturer's manual;
- instructions, schedule, log (report) for maintenance and checks of alarms and automatic protections working order;
- log of pressure gauges control checks;
- operating manual for safety valves approved by the technical director of the enterprise, documents confirming the adjustment of the safety valves;
- conclusions of expert organizations confirming the possibility of operating vessels the standard service life of which has expired.

The availability and content of documents based on the results of monitoring and control of the metal of boilers and their pipelines shall be checked.

7.1.3 As regards steam and hot water pipelines:

- certificates with appendices, including the as-fitted drawing of the pipeline, approved by the maintenance manager of the branch;
- instructions for commissioning and maintaining pipelines. The manual shall be drawn up taking into account the local operating conditions of pipelines;
- documents based on the results of monitoring the thermal displacement of steam pipelines (if

such monitoring is provided for by the Rules).

At the thermal power plants, the availability and content of the following documents shall also be checked:

- documents on the results of monitoring and control of metal pipelines, checking bends of steam pipelines, replacing identified defective sections;
- documents determining the volume and location of selective nondestructive testing of feed pipelines;
- conclusions of expert organizations confirming the possibility of operating pipelines the specified service life of which has expired.

7.1.4 As regards hoisting machinery (hoisting cranes, hoists, towers, crane rails, load-handling devices, and containers):

- certificates;
- declarations or certificates of compliance with the Technical Regulations of the Customs Union TR CU 010/2011;
- shift logs of crane operators;
- repair log;
- examination record book of load-handling devices and containers;
- schedules of preventive maintenance;
- schedules of examination of hoisting machinery;
- conclusions of expert organizations on the possibility of further operating of hoisting cranes the standard service life of which has expired;
- process flow charts for the handling operations for all types of goods handled by cranes;
- slinging diagrams for the general cargo;
- permits to work for hazardous works regulated by the Rules;
- schemes of rail tracks leveling;
- protocols for measuring electrical equipment insulation resistance, current spreading resistance of grounding devices, checking safety devices;
- projects of production (organization) of works (CMP, MS) and technological maps (TK) with the use of lifting structures, which include: the compliance of the crane cranes with the conditions of the construction and installation work for lifting capacity, lifting height of the hook suspension and reach, compliance with approximation dimensions cranes to buildings, places of storage of goods, power lines, the relevance of removable lifting devices and containers to transported goods, the presence of cargo sling schemes, etc.;
- instructions on the place of storage and transfer of the key mark;
- instructions on the admission of maintenance personnel to independent work and providing it with production instructions.

7.1.5 On technological pipelines:

- certificates and maintenance logs;
- operating logs;
- logs of inspection of technological pipelines;
- conclusions of expert organizations on the possibility of further exploitation of technological pipelines that have fulfilled the standard service life;
- availability of orders on the admission of maintenance personnel to independent work and providing it with technical guidelines.

7.1.6 As regards tanks and vessels operating in an inorganic liquid acid and alkali environment:

- certificates;
- instructions for the safe operation and maintenance of tanks and vessels operating in an inorganic acid and alkali environment, ECAP;
- operating (shift) logs;
- log for checking the serviceability of alarms and interlocks;
- opinions of expert organizations confirming the possibility of operating tanks the standard

- service life of which has expired;
 - availability of flow diagram at the workplace with the pipelines and valves designated.
- 7.1.7 As regards FL warehouses:**
- certificates of process pipelines and vessels, certificate of FL warehouse;
 - opinions of expert organizations confirming the possibility of operating tanks the standard service life of which has expired;
 - instructions for the safe operation and maintenance of tanks and vessels, process pipelines, ECAP, and OSRP;
 - operating (shift) logs;
 - logs of inspection of control and signaling devices, vent valves, fire safety devices, manhole hatches, lighting holes, gauge hatches, and ventilation pipes of tanks and vessels;
 - availability of flow diagram at the workplace with the tanks and vessels, pipelines, and valves designated.
- 7.1.8 As regards buildings and structures:**
- certificates;
 - opinions of expert organizations;
 - technical logs on the operation of buildings and structures;
 - instructions for the operation of buildings and structures;
 - records of periodic inspection of buildings and structures;
 - instructions for persons responsible for the safe operation of buildings and structures.
- 7.1.9 As regards elevators:**
- certificates;
 - schematic wiring diagram;
 - log of daily (monthly) examinations;
 - maintenance logbook;
 - instructions for the elevator operator;
 - opinions based on the results of the assessment of conformity of elevator the specified service life of which has expired to the requirements of the Technical Regulations of the Customs Union TR CU 011/2011 *Safety of Elevators*.
- 7.2 The following shall be checked in the certificates for technical devices:**
- availability of a mark of registration with the Rostekhnadzor authority or with the Technical Supervision Department, production control service;
 - availability of a signature of the person responsible for the good condition and safe operation of the facility, the date and number of the order on their assignment;
 - availability of technical data, drawings, and other documents.
- 7.3 The availability of the following shall be checked in the repair logs:**
- records of completed repairs of the facility and documents confirming compliance with the requirements of the Rules during repair (selection of materials, electrodes, results of quality control test, welding, etc.);
 - drawings (sketches) of elements (pipes, chambers, etc.) replaced during repair specifying their location; records of adjusting safety valves or pulse safety devices;
 - records of results of measuring the wall thicknesses of elements of boilers, vessels, and pipelines.
- 7.4 The following shall be checked in shift (operating) and duty logs:**
- correctness of execution of the shift acceptance and turning over;
 - records of equipment condition, etc.;
 - records of the inspection of valves, safety devices, automatic controls of protection and alarm systems, etc., carried out by personnel in accordance with the instructions for the safe maintenance of the facility;
 - compliance with the records of the start and stop mode of the facility (duration, change in pressure and temperature);

- availability of a daily (in the business days) signature of the person responsible for the good condition and safe operation of the facility.
- 7.5 **The following shall be checked in the water treatment log:**
- availability and completeness of records on the results of analyzes of the feed and boiler water of steam boilers, make-up and network water of hot water boilers, the implementation of the boiler blowdown mode;
 - availability of records of deposits on internal surfaces, accumulations of sludge and metal corrosion detected during inspection of the boiler during its shutdown.
In thermal power plants, other forms of registration of works for water regime organization are possible.
- 7.6 In documents compiled based on the results of additional examinations, tests and control, the timeliness of their conduct, as well as the completeness and correctness of the records shall be checked.
- 7.7 **The following shall be checked in the technical logs on operation of buildings and certificates on the operation of chimneys and ventilation tubing of the branch:**
- availability of records provided for by the form of the log for operation of the building and the form of the certificate for the operation of chimneys and ventilation tubing;
 - availability of reports on the spring and autumn inspection.
- 7.8 **In the certificates on the operation of chimneys and ventilation tubing of the branch:**
- availability of information on routine repairs and overhauls;
 - availability of notes on checking the lightning protection devices condition;
 - availability of reports on the spring and autumn inspection.

8. BASIC CRITERIA TESTED WHEN EXAMINING STEAM BOILERS

8.1 At the workplace, it is necessary to make sure that the technical guidelines correspond to the specific operating conditions of the equipment. If works were conducted to convert boilers from solid to liquid and gaseous fuels, to reconstruct basic or auxiliary equipment, etc., it is necessary to check whether the new operation conditions of the equipment are reflected in the instructions.

8.2 Before checking valves, control and measuring instruments, alarm systems, automation and protection, it is required to be familiarized with the certificates and manuals for their operation. By records in the shift log, it is necessary to make sure that the inspection frequency complies with the rules and instructions in respect of valves (safety valves, water-level indicators, and pressure gauges), high-water alarms, devices for automatic shutdown of the fuel supply when the water level drops below the permissible level, as well as that the defects detected are timely eliminated.

8.3 When inspecting valves and control and measuring instruments, it is necessary to check the conformity of their technical characteristics, quantity and location, joint tightness, lighting, and accessibility for maintenance to the requirements of the Rules. The following items shall be subject to inspection:

8.3.1 Safety valves:

- compliance of the quantity and throughput capacity of safety valves (according to certificate data) with the requirements of the Rules, and the correctness of their placement;
- availability and compliance with the requirements of the Rules of the outlet pipes from the safety valves;
- availability of a lockable casing at the control cargo deadweight safety valve and devices for checking its serviceability by forced opening;
- compliance with the instructions for checking pulse safety devices on boilers with a vapor pressure of 4.0 MPa.

8.3.2 Water-level indicators:

- compliance of the number and locations of water level indicators, as well as purge and drainage valves with the requirements of the Rules;
- availability of reduced water-level indicators (in cases stipulated by the Rules) and the

- correctness of their connection;
- availability on water-level indicators of permissible water upper and lower indicators, the correctness of their location and sufficient lighting;
- availability and integrity of the protective casing on water-level indicators of direct action, on boilers with a pressure of more than 4.0 MPa;
- compliance with the requirements of the Rules for the size and configuration of coupling pipes;
- availability of devices for the safe removal of water and steam during purging.

8.3.3 Pressure gauges and measuring devices:

- availability of pressure gauges in places provided for by the Rules;
- availability on the scale of a red line (metal pointer on the casing) on the point corresponding to the permitted pressure;
- availability on steam boilers with steam pressure up to 4 MPa of a siphon tube with a diameter of at least 10 mm with a three-way cock or other similar device with a hydraulic shutter, and on boilers with steam pressure above 4 MPa – valves allowing to disconnect the pressure gauge from the boiler, vent it to the atmosphere and purge the siphon tube;
- availability of a seal or stamp with the date of the state inspection of the pressure gauge.

8.3.4 Devices for measuring temperature of steam, water and liquid fuel:

- compliance of the number and locations of devices with the requirements of the Rules;
- availability and serviceability of the indicating and recording instruments for measuring the temperature of superheated steam.

8.3.5 Automation, protection, and alarm devices:

- availability and serviceability of alarms and other water levels automation equipment in steam boilers;
- inspection of the technical condition and compliance with the established time limits for their repair.

8.4 When inspecting the external surfaces of boilers and appurtenances, the following shall be checked:

- availability of registration plates on each boiler;
- state of the boiler lining and thermal insulation of its individual elements;
- in accessible places, the condition of the lining and shotcrete protecting the boiler elements from overheating, as well as gas baffles and heating surfaces (through inspection openings and furnace doors);
- serviceability of manholes, hatches, covers, and their fastenings, as well as furnace doors and their latches;
- availability and serviceability of benchmarks for monitoring thermal displacements;
- availability and integrity of explosive safety valves;
- availability of the outlet to a safe place of steam and water from the purge, drain, and drainage pipelines;
- equipping waste heat boilers with shut-off devices for quickly shutting off the gas supply to the boiler (in cases stipulated by the Rules) and safety devices for gas pipelines and flues;
- compliance of feed pumps with the project and requirements of the Rules;
- compliance of water treatment equipment with the project. During the inspection, it is necessary to pay attention to strict observance of the norms of quality of feed water (according to records in the water treatment log), the correct maintenance of water treatment equipment and the observance of the schedule for boilers shutting down for cleaning;
- compliance with the water regime stipulated by the Rules for the technical operation of power plants and networks; if necessary, require the determination of individual indicators of water quality in the presence of an engineer.
- correct of disconnection of boilers being repaired from operating and supply pipelines.

9. BASIC CRITERIA TESTED WHEN EXAMINING PRESSURE VESSELS

9.1 When inspecting a vessel at its installation site, attention shall be paid to the following:

- compliance of the vessel connection diagram attached to the certificate with the actual performance, as well as the availability of the vessel connection diagrams placed at the workplace;
- compliance of the working environment and its parameters with the certificate data;
- compliance of the vessel installation with the requirements of the Rules;
- availability of registration plates on each vessel;
- availability of platforms, stairs, and other devices providing convenience of vessels servicing;
- condition of the insulation of vessels and the protective coating (coloring) of the individual elements;
- serviceability of manholes, covers, and their fastenings;
- availability of movable and immovable supports and their compliance with the design;
- compliance of the external coloring of tanks, as well as distinctive stripes and inscriptions with the requirements of the Rules;
- correctness of disconnection of vessels being repaired.

9.2 The following shall be checked at the workplace:

- correspondence of the instructions for the operating mode and safe maintenance of the vessels to specific operating conditions;
- timeliness of checking pressure gauges, safety devices, protection and alarm automation devices;
- procedure for keeping records in operating (shift) logs;
- procedure for storage and use of “power interlock key” for vessels with quick disconnect caps;
- procedure and observance of safety measures during the withdrawal of vessels for repair, as well as additional safety measures for vessels containing flammable, explosive, or harmful environment.

9.3 Before inspecting valves, control and measuring devices, automation, protection, and signaling devices, it is necessary to establish their compliance with the requirements of the Rules and the project, the timeliness of inspections, adjustments, and repairs.

9.3.1 The following items shall be subject to inspection:

- **Pressure relief devices:**
 - compliance of the quantity and throughput capacity of safety devices with the requirements of the manufacturer (designer) of the Rules, and the correctness of their installation;
 - availability of a device allowing to monitor the serviceability of the bursting disk when installing them in front of the safety valve (by ownership);
 - equipping the safety valves with a device for checking the serviceability in working condition by forced open during operation or (by environmental properties or process conditions) timeliness of checking the valves on the bench.
- **Pressure gauges:**
 - availability on the scale of a red line corresponding to the permitted pressure;
 - availability of a seal or stamp with the date of the state inspection of the pressure gauge;
 - availability of a three-way cock or a device replacing it for purging, checking and turning off the pressure gauge.
- **Measuring, automation, protection, and alarm devices:**
 - availability and serviceability of safety devices that prevent the possibility of turning on the vessel with a quick disconnect caps when the cap is not fully closed, as well as opening it when there is pressure in the vessel;
 - availability and serviceability of reducing devices, as well as a safety valve and pressure gauge behind the reducing device for vessels operating under pressure lower than the pressure of the supply source (serviceability shall be checked by the pressure gauge readings);

- availability and serviceability of liquid level indicators in vessels with a media interface;
- availability of sound, light, and other signaling devices, interlocks at an acceptable level if they are provided for by the design;
- availability and serviceability of check valves for vessels with toxic or explosive environment in the supply lines from pumps or compressors.

9.4 When inspecting high-pressure heaters of thermal power plants, it is required to check the availability of automatic means of signaling and protection against excess water levels in the HPH casing and devices preventing the possibility of the protection switching off by operating personnel.

9.5 For vessels installed in open areas or in unheated premises, measures taken to prevent freezing of safety valves and blowdown lines shall be checked.

10. BASIC CRITERIA TESTED WHEN EXAMINING STEAM AND HOT WATER PIPELINES

10.1 When inspecting pipelines, it is necessary to pay attention to the following:

- compliance with the actual location of pipelines with the as-fitted drawings attached to certificates;
- accessibility for maintenance, as well as the performance of the types of pipelines control provided for by the Rules;
- condition of thermal insulation;
- lack of pipelines jamming in places of passage through a ceiling or walls, jamming by load-bearing structures, technological, drainage, and other pipelines;
- condition of rigid and spring suspensions, movable and immovable supports;
- availability and serviceability of indicators of the temperature displacement of steam pipelines in places provided for by the design, and the organization of control over the temperature displacements of steam pipelines;
- compliance with the Rules and the design of the location of air vents and drainages; availability of check valves on the feed pipelines;
- compliance with the requirements of the Rules for the number and location of shut-off and control valves, as well as its compliance with operating parameters; availability of a three-way cock;
- availability and serviceability of pressure gauge, three-way cock or a device replacing it for purging, checking and turning off the pressure gauge;
- availability and serviceability of safety devices;
- availability of coloring and inscriptions on pipelines in accordance with the requirements of the Rules and GOST 14202;
- compliance of the inscriptions on the valves and their actuators with the requirements of the Rules;
- availability of registration plates;
- compliance with the requirements of the Rules in case of joint laying of steam pipelines with other process pipelines.

11. BASIC CRITERIA TESTED WHEN EXAMINING FILLING STATIONS AND BOTTLE TEST POINTS

11.1 When reviewing the technical documentation, the availability of the following documents shall be checked:

- orders on the appointment of trained and certified workers for filling, repair and examination of bottles, as well as specialists who are entrusted with the management of the activities of the said workers, and the correctness of their appointment;
- instructions on the procedure for inspection, rejection, repair and technical examination of bottles received at the test point, instructions on the acceptance procedure for filling and delivery of filled bottles to consumers;

- regulatory documentation (GOSTs for bottles, valves, gas, etc.);
 - certificates of drivers and forwarders involved in the transportation of bottles;
 - quality of maintaining logs for filling, repair, and technical examination of bottles.
- During the inspection, the premises of the filling station shall be checked for compliance with the requirements of the Safety Rules, as well as for storage of bottles in open areas and in warehouse facilities.

11.2 When examining filling stations, attention shall be paid to the following:

- compliance with the rules for cylinders filling;
- cleanliness of the premises, serviceability of control and measuring instruments, observance of measures to prevent gas contamination of premises and to prevent the possibility of oil and fat products entering them (for oxygen);
- availability of special places reserved for rejected bottles;
- availability of residual pressure in bottles provided for filling;
- availability of specially equipped cars and other vehicles arriving at the station to receive filled bottles, correctness of placement of filled bottles in cars, availability of sun protection, availability of caps, plugs, and other safety devices on bottles placed in vehicles;
- availability of distinctive coloring and the appropriate inscriptions on the bottles.

When examining filling stations, a thorough external inspection of filled and approved for filling bottles must be carried out (selectively) to identify damage, malfunctioning valves, gas leaks, the availability of stamps and their correspondence to stamps entered in the filling log.

11.3 When examining test points, attention shall be paid to the following:

- availability of technical means, devices, providing the possibility of high-quality technical inspection and repair of bottles;
- availability and serviceability of control and measuring instruments, valves and safety devices installed on stands for hydraulic testing of bottles;
- organization of degreasing of oxygen bottles parts;
- correctness of storage of stamps that are used for bottles stamping.

When examining the test point, an internal inspection of bottles shall be performed (selectively) followed by a hydraulic testing.

12. BASIC CRITERIA TESTED WHEN EXAMINING HOISTING MACHINERY

12.1 Inspection of the technical condition of hoisting cranes shall include:

- inspection of the site of the hoisting crane installation (make sure that the crane is installed in accordance with the project and the requirements of the Rules);
- checking the availability on the crane of plates required by the Rules;
- inspection of sectional sites of the main trolley wires (repair pens) and alarm on the presence of voltage on the trolleys;
- inspection of the circuit breaker supplying voltage to the main trolley wires, check of free access thereto, inscriptions, and locking device;
- check of platforms and stairs. When examining the galleries of platforms and stairs, it is necessary to pay attention to the fact that their fence must comply with the requirements of the Rules. Entrances to the crane tracks and galleries of overhead cranes that are in operation must be locked;
- inspection of the crane track.

12.2 When inspecting the hoisting crane, it is necessary to follow the Rules and manufacturers' manuals, while checking:

- allowable wear of mechanisms in accordance with the requirements of the manufacturer's manual or other regulatory documents;
- condition of the ropes; in case of any damage to the ropes, the suitability for further operation shall be determined in accordance with the instruction manual for the crane or the Safety Rules;
- fastening the ropes on a hoisting machine while paying attention to the fastening methods that

- must meet the requirements of the Rules;
 - serviceability of safety devices and equipment by checking their operation; serviceability of overload limiter shall be checked by lifting the control weight;
 - condition of the removable hoisting devices and containers in operation, correctness of their storage and labeling.
- 12.3 When performing works with hoisting cranes, in terms of compliance with the Safety Rules and instructions, the following shall be checked:
- availability and observance of orders on the appointment of specialists responsible for the safe performance of works by cranes;
 - conformity of the maintenance personnel (crane operators, slingers, etc.) appointed by the order, as well as the procedure for instructing them at the workplace and the availability of appropriate certificates;
 - availability of method statements during construction and installation works and compliance with the requirements specified therein;
 - availability of tables of cargo weight, slinging diagrams, and cargo hooking;
 - observance of personal safety measures by slingers when lifting, moving, and installing goods;
 - absence of strangers not involved in the works of SSD, people in the area of the cranes operation;
 - conformity of the cranes used to the conditions of works performance (in terms of load capacity, span, lifting height, etc.);
 - correctness of installation of jib cranes;
 - compliance with the requirements stipulated by the rules when moving goods over production and office premises where people may be;
 - serviceability of removable load-handling devices and containers and their compliance with the requirements of the Rules;
 - availability and procedure for issuing permits to work (during the operation of cranes near power lines, during work on crane tracks, during the repair of overhead cranes).

13. BASIC CRITERIA TESTED WHEN EXAMINING ELEVATORS

- 13.1 The following shall be checked in the elevator certificate:
- availability of a permit for elevator commissioning;
 - availability of the number and date of the order, full name and signature of the specialist responsible for organizing maintenance and repair of the elevator and the specialist responsible for the good condition of the elevator;
 - compliance of the technical data available in the certificate, drawings, certificates and other documents with the requirements of the Rules.
- 13.2 Availability of the following records shall be checked in the maintenance log:
- records of completed repairs;
 - records of maintenance according to the schedule.
- 13.3 In the shift log of the elevator operator, the following shall be checked:
- availability of records of elevator equipment condition;
 - correctness of record of the execution of the shift acceptance and turning over.
- 13.4 When inspecting the elevator, it is necessary to follow the Rules and the manufacturer's manual. The scope of inspection shall be determined at the site taking into account the technical condition of the elevator, while paying attention to:
- availability of elevator use rules;
 - elevator mechanisms wear;
 - condition of ropes and their fastening;
 - inspection of the main loading site;
 - inspection of the compartment;
 - inspection of the engine room;

- shaft inspection;
- inspection of electrical safety devices;
- switches inspection.

14. BASIC CRITERIA TESTED WHEN EXAMINING PROCESS PIPELINES

14.1 When inspecting process pipelines, it is necessary to pay attention to the following:

- compliance with the actual location of process pipelines with the as-fitted drawings attached to certificates;
- accessibility of pipelines for maintenance, as well as the performance of the types of pipelines control provided for by the project;
- condition of thermal insulation and compliance of the identification coloring on pipelines with the requirements of GOST 14202;
- lack of pipelines jamming in places of passage through a ceiling or walls, jamming by load-bearing structures, steam pipelines, gas pipelines, and other pipelines;
- condition of the hanger-support system;
- compliance with the design of the location of air vents and drainages;
- compliance of the number and location of locking devices with the project requirements, as well as their compliance with operating parameters;
- compliance of the valves numbering with the flow diagram;
- availability of plates indicating the transported medium, registration number, permitted pressure, and ambient temperature;
- compliance with the requirements of the project, GOST, RU, and SNiP in case of joint laying of process pipelines with other pipelines.

15. BASIC CRITERIA TESTED WHEN EXAMINING TANKS AND VESSELS WORKING IN THE NON-ORGANIC ACIDS AND ALKALI ENVIRONMENT

15.1 When inspecting a vessel at its installation site, attention shall be paid to the following:

- compliance of the tank connection diagram attached to the certificate with the actual performance, as well as the availability of the tank connection diagrams placed at the workplace;
- compliance of the working environment and its parameters with the certificate data;
- compliance of the tank installation with the requirements of the project and the Rules;
- availability of platforms, stairs, and other devices providing convenience of tanks servicing;
- availability on the tank of plates specifying the registration number, medium, working pressure and temperature, and volume;
- condition of thermal insulation: if insulation is wet or swollen, it is necessary to find out the cause;
- serviceability of manholes, covers, and their fastenings;
- availability and serviceability of level control devices, existing locks;
- availability in open warehouses of a wind direction indicator;
- availability of safety signs in hazardous areas;
- availability and serviceability of safety showers.

16. BASIC CRITERIA TESTED WHEN EXAMINING FUEL AND LUBRICANT MATERIALS WAREHOUSES AND EXPLOSION HAZARDOUS SUBSTANCES STORAGE

16.1 The following shall be checked during the examination:

- compliance with the established procedure for the use of technical devices;
- availability of control devices on the tanks;
- availability of the flow diagram specifying the location of the equipment;
- availability of equipment certificates;

- availability of a positive opinion of the examination of industrial safety of tanks the standard service life of which has expired;
- availability of documentation confirming the conduct of inspections, revisions of lightning protection;
- availability in the workplace of the required instructions and diagrams;
- availability of plan of traffic in the territory;
- availability of a scheme of pumping units binding;
- compliance of the tank connection diagram attached to the certificate with the actual implementation;
- availability of platforms, stairs, and other devices providing convenience of tanks servicing;
- availability of documentation confirming the cleaning, revisions of vessels, and tanks;
- serviceability of warehouse lighting in explosion-proof design;
- serviceability of the two-way communication system;
- availability of gas analyzers and emergency ventilation systems;
- availability of approved storage schemes for explosive substances and packaging integrity.

17. BASIC CRITERIA TESTED WHEN EXAMINING GAS FACILITIES

17.1 During the examination, the following shall be examined and checked:

- regulatory and methodological support for safe work;
- organizational and technical support for safe work;
- knowledge of instructions and methods for safe work and their implementation by workers of the workshop, site;
- assessment of safety of the technical condition of the equipment used (according to the submitted reporting documentation);
- availability of permits to use domestic and imported gas equipment from Rostekhnadzor.

17.2 When examining the gas facilities of workshops, sections, it is required to check:

- ability of the gas service to ensure normal and safe operation of the gas facilities of the enterprise;
- equipment of the gas service of the enterprise with the necessary tools, inventory, equipment, spare parts, devices, personal protective equipment to ensure operational management of the equipment, maintenance, and gas hazardous works, as well as localization and elimination of possible accidents;
- observance of the terms for bypassing underground gas pipelines as provided for by the schedules in order to check the gas contamination of wells, overflow tubes, and other structures and devices installed on gas pipelines, as well as wells located at a distance of up to 15 m to both sides of the gas pipelines, other underground structures; availability of route charts for bypassing underground gas pipelines;
- plans of localization and elimination of possible accidents in the gas sector, ensuring timely call of personnel for emergency works, developed by the enterprise;
- availability of approved schedules for conducting training sessions with gas service personnel according to plans of localization and elimination of possible accidents and documents on performed training sessions and periodic briefings;
- organization of gas hazardous works;
- organization of work of the emergency dispatch service.

17.3 When conducting inspections of thermal power plants, the following shall be checked:

- organizational measures to create a safety system in the gas sector;
- availability of a package of as-built documentation for the gas facilities and the procedure for its storage;
- timeliness and quality of repair and other maintenance work on gas equipment and gas pipelines according to the R&D schedules, namely:
 - aboveground gas pipelines;

- domestic gas pipelines and gas equipment;
- gas consuming units;
- automation and instrumentation;
- recording the results of repair work on gas pipelines in the certificates executed for them;
- technical condition of the facilities:
- good condition of explosion-resistant devices, incl. high-speed shut-off valves and steel taps (gate valves) installed directly in front of the burners;
- equipment of lighting-up burners with remotely controlled ignition devices (RCID);
- availability of plugs on the gas pipelines of boilers in repair or reserve;
- compliance with the operating mode of the units, maintenance of daily sheets by boiler operators;
- presence at workplaces of warning signs, instructions, posters, and flow diagrams;
- equipment of boiler units with monitoring devices, including those by gas pressure before burners, before control valves, and on instrumentation panel after GDP;
- ensuring of verification and check of measuring instrument within the time period established by regulatory documents;
- ensuring the safety of boiler plants works by technological protections, interlocks, and alarms;
- availability of methods, instructions, and schedules for periodical inspection of automation thermal protection installations;
- availability of parameter charts for the response time of technological protections; settings and triggering of safety devices (locking and dumping) and the frequency of their inspection in accordance with the available schedules;
- availability of seals on the protection equipment;
- establishing the reasons for making inoperative the protection devices and the analysis of the root causes of its triggering;
- inspection of the lining and gas flues of the boiler unit (by the personnel of the CHPP);
- modes of operation of blowing and exhaust fans;
- availability of an interlock to automatically reduce the load of boiler units when one of the smoke exhausters or one of the fans is disabled;
- availability (at the CHPP) of a stock of nonstandard gas equipment, availability of documentation (design and as-built) for this equipment and information on the manufacturer and documents on testing this equipment, provision of the premises with serviceable lighting fixtures, efficient ventilation, and a smoke exhaust system;
- compliance with the procedures for gas hazardous works and documentation execution;
- availability of plans for localization and elimination of possible accidents in the gas sector, compliance with the timing of training sessions and reporting documentation.

18. BASIC CRITERIA TESTED WHEN EXAMINING BUILDINGS AND STRUCTURES

18.1 When examining buildings and structures, the following shall be checked:

- keeping records in technical logs on the operation of buildings and structures;
- implementation of measures for the expert review of industrial safety and materials of inspection of engineer constructions of buildings and structures by specialized organizations.

18.2 When inspecting the engineer constructions of buildings and structures, it is necessary to pay attention to the following:

- condition of the layout of the land, blind areas, ramps at the building, and structures for the removal of atmospheric precipitation;
- compliance of loads and impacts on engineer constructions with the limits stipulated by the project, existing RTD;
- proper operation of supply and exhaust ventilation, internal networks of heat supply, sewage, and technological communications;
- availability of inscriptions of the values of permissible ultimate loads, numbering of axes,

- rows applied to the walls, columns, and other clearly visible elements of the building;
- condition of foundations, external and internal walls, roofs;
- condition of floor slabs, coatings;
- condition of the columns and their connections, crane beams, main and secondary floor beams, coating beams, beams, bars, and trusses;
- proper operation of storm-water sewers;
- condition of roof monitors;
- condition of door and window blocks, jambs, transoms, and floors;
- maintenance in proper condition and cleanliness of trays, channels, and gangways;
- condition of anti-corrosion protection of the engineer constructions.

18.3 Inspection of chimney and ventilation industrial pipes:

18.3.1 During an external inspection of reinforced concrete and brick chimneys, the following shall be checked:

- integrity of brickwork and concrete;
- tightness of grip of concrete on steel, its exposure;
- availability and width of vertical cracks opening;
- peeling of the protective layer of concrete, availability and size of poorly compacted concrete sections;
- degree of metal corrosion;
- condition of paint coatings;
- availability of grounding;
- integrity of welds, rivet and bolt joints;
- damage to the staircases in the places of their fastening to the pipe stem;
- condition of cable-stayed stretch marks, their attachment points and other defects distinguishable and evaluated visually.

18.3.2 When inspecting metal pipes, the following shall be checked:

- anti-corrosion coating;
- integrity of the metal casing, welds, bolt and rivet joints;
- availability of circuit grounding;
- condition of cable-stayed guy-rope attachments;
- serviceability of the nodes of their attachment to the casing of the pipe and anchor devices;
- condition of pedestals for pipes and anchor clamping of pipe to the foundations.

18.4 During the inspection of the pipes, the availability and serviceability of the lightning protection on measuring instruments of the pipes provided for by the project shall be checked.

18.5 Protocol for measuring the resistance of a lightning protection circuit.

19. BASIC CRITERIA TESTED WHEN EXAMINING THE PREPAREDNESS, AWARENESS OF THE PERSONNEL, CHECK OF PERFORMANCE OF PREVIOUSLY ISSUED ORDERS, AND FULFILLMENT OF DECISIONS OF EXTERNAL SUPERVISORY BODIES

19.1 Organization of training, certification and re-assessment of the knowledge of maintenance personnel.

19.2 Organization of training and certification for knowledge of the requirements of the rules, norms, and safety instructions for managers and specialists.

19.3 Compliance with the established procedure for the personnel admission to technical devices maintaining.

19.4 Conformity of the level of personnel maintaining technical devices to the requirements of the Safety Rules and RTD.

19.5 Correctness of the appointment of specialists responsible for the good condition and safe operation of technical devices, and the quality of fulfillment of their duties.

19.6 Knowledge of technical guidelines by the maintaining personnel.

19.7 Monitoring of emergency response exercises.

19.8 Implementation of measures to ensure safe operation of facilities developed in pursuance of decisions and instructions of the public authorities, as well as those related to materials of accidents and incidents investigations.

19.9 Execution of decisions, orders, and instructions of Rostekhnadzor authorities, as well as issued instructions.

19.10 Execution of previously issued instructions of engineers of the departments of technical supervision and industrial control.

19.11 Timeliness of technical examinations and industrial safety expert reviews for technical devices.

19.12 Implementation of maintenance and repair works established by the schedules, compliance with the requirements of the Rules during their implementation, correctness of the execution of repair documentation,

19.13 Compliance with the requirements of the Rules when commissioning facilities after repair.

20. CORRECTIVE AND PREVENTIVE ACTIONS, EXECUTION OF TEST RESULTS

20.1 Information on the conducted examinations is used in the analysis of the effectiveness of the safety management system and OS.

20.2 Based on the results of the inspections, the engineers of the departments and technical supervision services (hereinafter, engineers of the departments) together with the specialists who took part in the examination shall analyze the identified and potential inconsistencies of the departments checked, issue an order (Appendix No. 1).

20.3 Orders based on the results of a scheduled, target, or operational inspection (if there are violations) shall be issued with specification of the violations identified, the proposed measures to eliminate them and the timing of their implementation. One copy of the order shall be handed over to the head of SSD, the second one shall be kept by the engineer of the department for control purposes.

20.4 The results of an operational inspection may be executed in the form of an internal memo specifying the violations identified. Identified violations during the examination may be supplemented by photographs. Prescriptive order or internal memo shall be signed by the heads of departments and services. One copy of the inspection certificate shall be handed over to the head of SSD, the second one shall be kept by the engineer of the department for control purposes.

20.5 Reasons of the inconsistencies identified during inspections are classified as follows:

- lack of employee awareness;
- lack of resources (labor, financial, etc.);
- shortcomings in the process organization;
- insufficient control;
- equipment wear and tear;
- other.

20.6 If necessary, based on the results of the inspection, instructions to various responsibility centers can be issued.

20.7 After receiving the instructions, the head of the inspected subdivision shall organize the development of measures to eliminate the identified inconsistencies; if necessary, they can be included in the internal workshop agreements on health and safety. If the corrective actions require high costs, the head of SSD shall organize the introduction of appropriate measures in the long-term programs / plans of the branch for implementation. Department engineers shall monitor implementation of the relevant activities included in the program.

20.8 Within the time periods specified in the instructions, the head of the inspected subdivision shall send to the HSE and Industrial Safety Directorate of the branch (hereinafter, the HSE&IS Directorate) an internal memo with a report on the implementation of the instructions (Appendix No. 2).

20.9 After receiving an internal memo with a report on the implementation of the instructions, the department engineer shall within one month check the implementation of the instructions and make

an appropriate mark in the relevant column of the report.

20.10 If it is impossible to fulfill the instructions within the prescribed period, the head of subdivision shall send an internal memo on the postponement to the HSE&IS Directorate. If there are objective reasons for the postponement of the instructions implementation, the head of the department or service shall postpone the instructions implementation to a later date.

20.11 If necessary, in order to avoid the re-occurrence of identified inconsistencies in other SSDs, by decision of the HSE&IS Director, the head of the department and industrial control service shall organize the preparation of a draft order specifying violations identified in a certain SSD and those potential for other SSD, outlining measures for their elimination (preventive actions).

20.12 In the absence of violations during the inspection, the engineer of the department conducting the examination shall draw up an act in the form approved at the branch.

21. SUPERVISION OF COMPLIANCE WITH THE REQUIREMENTS OF THE STANDARD

21.1 Supervision of implementation of the Standard shall be entrusted to the HSE and Fire Safety Directorate of the Head Office which shall be performed by inspections of the activities of the Company's branches.

Developed by:

Head of the Industrial Safety Area
of Ilim Group JSC

S. V. Leznyakov

APPENDIX 1

**Branch of Ilim Group JSC
INDUSTRIAL CONTROL DEPARTMENT, SERVICE / TECHNICAL SUPERVISION DEPARTMENT**

To:

I,

In the period from to have conducted an examination of

in the presence of

In the course of the examination, a number of violations of the requirements of the Rules and other regulatory documents in the field of industrial safety has been identified.

Item No.	Violation identified	Article, clause of the document the requirements of which are violated	Cause	Measures to eliminate the violation identified (corrective actions)	Dates of elimination	Completion (postponement) status

I have read the instructions and received one copy for execution: _____

Signatures of specialists who participated in the examination:

I ask you to provide an answer to these instructions before:

to the Industrial Control Department,
Service / Technical Supervision Department of Ilim Group JSC

The instructions issued by: _____

APPENDIX 2



Internal Memo

20....

Item No. __

To the Industrial Control Department,
Service / Technical Supervision
Department

On the implementation of the instructions
Item No. _____ from _____

Item No.	Subdivision, site, and workshop: Violation identified	Time limits for elimination under the instructions	Measures taken to eliminate the violation. Grounds for the postponement of the period for elimination of the violation	Date of actual execution	Date of the postponement of execution	Engineer's mark of implementation. Date
1	2	3	4	5	6	7

Head of the subdivision _____ Full Name
(Signature)