



**Closed Joint-Stock Company
Caspian Pipeline Consortium**

СОГЛАСОВАНО / APPROVED

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INCIDENT INVESTIGATION STANDARD

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1. GENERAL

1.1. Purpose

1.1.1. This Standard describes the procedure for carrying out internal technical investigation of causes of breakages, fires, accidents, *etc.* (hereinafter *incidents*), establishing circumstances, causes (including determining root causes), scope of inflicted damage, and responsible persons, and developing and control over implementation of corrective and protective measures for preventing similar incidents at the facility in question and other facilities of CPC.

1.1.2. The Procedure is required to ensure prompt and complete incident investigation, to reveal incident causes, and to disseminate learnt lessons in order to prevent similar incidents in future.

1.2. Scope

1.2.1. Requirements set forth herein shall be subject to compulsory implementation by all Regions and subdivisions of the Company, as well as by CPC contractors carrying out activities at CPC facilities regardless of their types of business entity ownership.

1.2.2. This Procedure describes incident investigation system and incident reporting sequence at the CJSC CPC-R and JSC CPC-K (hereinafter the *Company*).

1.2.3. This Procedure does not supersede the incident investigation, recording and reporting procedure established by the legislative and other statutory acts of the Russian Federation and Republic of Kazakhstan wherein the Company operates.

2. TERMS AND DEFINITIONS

#	Term	Term Definition
1	Motor vehicle accident (MVA)	An event occurred in the process of a motor vehicle movement along the road and involved this motor vehicle, which resulted in human death or injury, damage to transport facilities, structures, cargoes or other material damage. In order to qualify an event as a MVA, existence of at least three conditions is required, <i>viz.</i> : a transport vehicle (TV) should move, an event itself must relate to that TV, and the event consequences must correspond to those listed in the definition above.
2	Occupational MVA	Any MVA involving a TV used for fulfillment of the Company operational tasks. In this regard TV implies a TV owned by the Company, Contractor, or Subcontractor, as well as a leased or personal TV. Fulfillment of operational tasks means business operations carried out on behalf of the Company with the TV use.

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3	Transport vehicle (TV)	Any device with a mechanical or electrical drive (excluding those driven by muscle power) intended for carriage of people, cargoes or equipment installed on it by roads. TV's moving by permanently installed rails and those incapable of accelerating over 16 km/h are specifically excluded from the TV definition.
4	Properly parked TV	A TV stopped or left in a place safe for parking (with exclusion of its uncontrolled movement), including roadside verges with designated parking areas.
5	TV tipover	Any MVA in which a TV tips over on its side, roof and/or turns over 360 degrees along any of its pivot axis.
6	Property damage	Direct loss or breakdown of Company equipment, instrument or materials resulted from an incident.
7	Company	CJSC Caspian Pipeline Consortium-R, JSC Caspian Pipeline Consortium-K
8	Hazardous production factor	A production factor, the effect of which on an employee may lead to his/her trauma
9	Unsafe action	Action or omission creating dangerous situation or conditions, which may be a cause of an incident
10	Safe working conditions	Working conditions, wherein exposure of workers to harmful and (or) hazardous production factors is prevented or when exposure levels do not exceed the established norms.
11	Safe zone	A zone in which people are protected against hazardous factors of fire or in which no hazardous factors exist.
12	Workplace	Place where an employee should be or where he/she should arrive to in connection with his/her job and which is directly or indirectly under an employee's control.
13	Reporting	A process of interchanging information regarding incident details by means of CPC HSE Management System
14	Contractor	Organization that has executed an agreement with CPC for performing a contract/providing services at CPC facilities or, as the context may require, its responsible representative.
15	Subcontractor	Organization that has executed an agreement with CPC contractor for performing a contract/providing services at CPC facilities or in the interests of CPC or, as the context may require, its responsible representative.
16	Near Miss Event	Any unplanned event, action or condition that under different circumstances could have resulted in injury, accident, damage to property, environment and/or Company's reputation.
17	Permanent disability	Irreparable loss of functions in the form of person's physical dysfunction and limitation of ability to work regardless of the person's qualification and profession.
18	Incident	Any unplanned event, action or circumstance, or sequence of

		events, actions or circumstances, that have resulted in a job related accident, accident, incident, illness, infliction of damage to property, environment or reputation of the Company, including accidental loss/loss of life.
19	Emergency	A situation existing at a facility of the Company as a result of an accident, disaster or other causes and their consequences, which may entail or has entailed human losses, damage to human health, material losses and disruptions in the living environment of people and enterprises.
20	Occupational illness	Illness resulted from effect of unfavorable productional/occupational factors (pneumoconiosis, vibration disease, intoxication, <i>etc.</i>), and a number of such diseases in development of which causal link has been established with effect of certain productional factor (bronchitis, allergenic diseases, cataract, <i>etc.</i>)
21.	Job related accident	Accident occurred with an employee or other person during exercising his/her employment duties and performing a work assigned by his/her organization or employer.
22	First aid case	Work related injury that requires no qualified medical care and does not result in loss of labor capacity, incapacitation or death of an employee.
23	Case of labor capacity loss	Job related trauma that has not resulted in an employee's death but resulted in documented (with execution of a labor inability certificate or sick leave) loss of labor capacity during at least one day after the day when the job related trauma has been suffered (or illness occurred). The term "at least one day" includes rest days, weekends, vacation days, official holidays, and days after employment termination.
24	First medical treatment case	Job related trauma requiring provision of qualified medical treatment but not resulted in labor capacity loss, incapacitation or death of an employee.
25	Lost time injury	Job related trauma that has not resulted in an employee's death or loss of labor capacity but resulted in the employee's inability to fulfill his/her usual job in full during any day following the event of the job related trauma suffering.
26	Fire	Uncontrolled burning, which causes material damage and harm to human life and health and to public and Company interests.
27	Explosion	Quick chemical transformation of environment accompanied by release of energy and generation of pressurized gases.
28	Accident	Destruction of structures and (or) technical devices used at a hazardous industrial facility, uncontrolled explosion and (or) emission of hazardous agents.
29	Incident	Failure or damage of technical devices applied at a hazardous facility; deviation from process conditions.
30	Third party	Any legal entity or natural individual except CPC contractors and subcontractors.

31	Environmental incident	Any unscheduled or uncontrollable generation of wastes (emission/discharge of materials, liquids or solid substances), which can have an impact on environment.
32	Root cause	Main cause or a number of causes of an incident that can be really established and eliminated. Root causes must always relate to production process or system of conduct of operations and must show in what place and how a given system operated contrary to expectations or plans.
33	Lessons learnt	Information or recommendations that should be brought to the notice of CPC and Contractor personnel with the view of subsequent use of those materials in work.

3. INCIDENT INVESTIGATION SYSTEM

3.1. Objectives and Tasks

3.1.1. The objective of internal incident investigation is to promptly establish causes of incidents and to circulate lessons learned to prevent similar incidents in future by means of correcting drawbacks in the HSE Management System of the Company. Investigation should show what regulations, rules, procedures are to be revised or modified, what safety management methods are to be improved, and what hazardous situations are to be eliminated or rectified.

3.1.2. Incident investigation carried out in a quality manner makes it possible to learn respective lessons, which, in their own turn, enable eliminating root causes or reducing extent of their impact and facilitating prevention of similar incidents in future.

3.1.3. Incident investigation is an aggregate of actions performed by all specialists of the Company and aimed at reduction of occupational injuries and accidents rates.

3.1.4. To ensure competent and effective incident investigation the following basic principles are to be observed:

- *Timeliness and promptness of investigation;*
- *Competence and authority of persons conducting investigation;*
- *Comprehensiveness, consistency, and objectivity of investigation;*
- *All-round distribution of learnt lessons and improvements in the **HSE** Management System as the most effective method of preventing similar incidents in future.*

3.2. Incident Classification

3.2.1. The following are subject to obligatory internal investigation:

- Job related accidents;
- Motor vehicle accidents;
- Emergencies;
- Near miss events;
- Job related illness;
- Breakage/accidents;
- Fires;
- Explosions;

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- Equipment failure;
- Environmental incidents.

3.3. Prompt Notification

3.2.1. Each industrial incident should be **IMMEDIATELY** reported by the injured person, witness or participant without fear of punishment and using all available communication means to the immediate supervisor, who shall bring it to the knowledge of the PS/MT shift supervisor and OCC dispatcher. Failure to meet this requirement may delay taking of necessary measures, which control incident consequences, and prevention of incident recurrence at another workplace.

3.2.2. Further notifications to concerned parties should follow:

- STP 001-12.07 “HSE Incident Notification Procedure”, Version 2.0, put into effect from August 20, 2010;
- Order of Rostekhnadzor “Procedure for Conducting Technical Investigation of Causes of Accidents, Incidents, and Cases of Industrial Explosives Loss at the Facilities Supervised by the Federal Environmental, Industrial and Nuclear Supervision Service” # 480 of August 19, 2011;
- Labor Code of the Russian Federation and Republic of Kazakhstan;
- Federal Law “On Industrial Safety of Hazardous Production Facilities” # 116-FZ of July 21, 1997;
- Law of the Republic of Kazakhstan “On Civil Defense” # 188-V of April 11, 2014; and
- Regulation on Specificities of Investigation of Job Related Accidents in Certain Industries and Organizations approved by Resolution of the Russian Federation Ministry of Labor and Social Development # 73 of October 24, 2002.

3.3.3. A serious or fatal accident should be **IMMEDIATELY** communicated to relatives of an injured or died person.

3.3.4. If relation of an incident with operating activities is not obvious at once, the incident should be acknowledged to be job related unless the contrary is proved in the course of the incident investigation. Final qualification should be determined by the CPC HSE General Manager.

3.4. Taking Priority Measures

3.4.1. Upon receipt of incident notification, immediate supervisor of the works, site manager, and person involved in the incident must:

- immediately organize first aid to the injured and, if necessary, their delivery to a medical institution;
- take urgent measures to prevent development of emergency situation and exposure of other persons to the traumatizing factor;
- keep the incident site intact, as it was at the time of incident, until the start of investigation (if this poses no threat to human life and health and would not lead to an accident). Should it be impossible to keep it intact the aforesaid persons must record the existing situation (with photo and video documents, drawings and schemes of the incident site, equipment or events occurred at the time of incident);
- notify regional management about the incident.

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In the event any employee of the Company or contractor arrives first at the incident site, he/she should take all measures listed above and inform the shift supervisor about the incident in order to coordinate actions until arrival of the immediate supervisor of works or representative of the incident investigation commission at the incident site.

3.5. Setting-up the Incident Investigation Commission

3.5.1. With respect to all incidents internal investigation should be carried out with the view of the following:

- determining main causes of incidents and their likely consequences;
- outlining necessary measures to reduce risks and threats;
- ensuring implementation of the outlined measures;
- assessing efficiency of implemented measures; and
- establishing information exchange between the CPC Regions and Region subdivision.

3.5.2. The Company establishes the following principles for incident investigation:

3.5.2.1. Severe industrial accidents, group accidents with fatalities and accidents are investigated based on the state regulatory requirements. The commission determined by respective supervisory authority shall include CPC representatives (on recommendation of the First Deputy General Director, Operations).

3.5.2.2. Motor Vehicle Accident Investigation Procedure is described in Attachment 3.

3.5.2.3. By decision of CPC General Director or First Deputy General Director, the CPC commission shall be formed based on a respective CPC resolution and internal investigation of incidents indicated in para 3.5.2.1. shall be conducted.

3.5.2.4. Incidents not included in para 3.5.2.1 shall be investigated by commissions of the CPC central office or region. In each case resolution on formation of the commission and its membership shall be adopted by the First Deputy General Director, Operations, or Deputy General Director, General Business (on the matters related to MVA's) upon approval with the HSE General Manager. Decision regarding formation of the commission and its membership shall be executed with a resolution issued to CPC /Region.

3.5.2.5. The Commission may engage for investigation of the incident causes (upon approval) expert organizations and specialists in the area of industrial and fire safety, surveying, designing, research-and-development activities, insurance, equipment manufacture, and other representatives of interested organizations.

3.5.2.6. Investigation of failures shall be conducted in accordance with requirements set forth in VRD CPC 85.01.2011 "Regulation on Investigation, Repair and Recording of Failures in Mechanical, Electrical and Instrumentation Equipment".

3.5.2.7. Investigation of incidents shall be conducted in accordance with requirements set forth in VRD CPC 38.06.2013* "Procedure for Investigation and Registration of Incidents at the CPC Facilities". Version 2.0.

3.5.2.8. The commission shall be composed of the Commission Chair and Commission members. The commission for technical investigation shall include odd number of members.

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3.5.2.9. Commission for investigation of an incident shall not include persons involved in the incident and/or persons involved in the process management during the incident.

3.5.2.10. Chair of the incident investigation commission shall:

- ensure work of the incident investigation commission;
- ensure compliance of the work fulfillment with the CPC requirements and applicable statutory requirements;
- provide on a regular basis information on the course of investigation conduct to the Region Management and, if necessary, to CPC Management.

3.5.2.11. The investigation commission shall:

- prepare a report on detected circumstances with indication of the incident direct and root causes, in particular those related to efficiency of the HSE Management System;
- propose corrective measures aimed at reducing probability of such incidents repetition. Corrective measures must meet the SMART principle, *i.e.* must be Specific, Measurable, Achievable, Realistic, and Time-bound;
- put forward proposals for dissemination of lessons learned from the incident.

3.6. In the course of investigation the Commission shall implement the following measures:

3.6.1. Carry out inspection, photographing (in full color), and, if necessary, video recording, develop schemes and sketches of the scene of incident, damage of equipment, mechanisms, buildings, and structures, and develop a record of inspection of the incident scene.

3.6.2. Interact with the heads of Emergency Response and Restoration Teams and other units involved in rectification of incident consequences.

3.6.3. Collect necessary information:

- interview witnesses of incident and obtain arguments in writing from officers;
- find out nature of conditions (whether conditions, condition of technical process and equipment, operational conditions, and conditions changing employees' behavior);
- check documents (log books, schedules, work permits, resolutions, electronic data of the management system, copiers of regulations and instructions applicable in the situation under which incident occurred, records regarding personnel training, *etc.*);
- material evidences (*i.e.* any data characterizing how an incident scene looked before and after the incident).

3.6.4. Check conformity of a facility or technical process with design solutions.

3.6.5. Check quality of design solutions and revisions to it.

3.6.6. Find out nature of violation of technical processes and conditions of equipment operation.

3.6.7. Find out circumstances preceded an incident.

3.6.8. Detect violations of requirements set forth in the occupational, industrial, and fire safety norms and regulations.

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3.6.9. Detect protection systems and includes them in the event sequence (technical means, control systems and procedures).

3.6.10. Check existence and operability of protection means for personnel.

3.6.11. Check operating personnel qualification.

3.6.12. Determines incident causes, viz.:

3.6.12.1. Physical reasons:

- wear and tear;
- deviation;
- material fatigue;
- excessive load;
- materials incompatibility;
- corrosion.

3.6.12.2. Human (behavioral) factor, *i.e.* human performance that lead to undesirable consequences and human inability to prevent undesirable consequences. Human factor is based not so much on personality characteristics as on person's actions and acts or failure to act.

This includes actions during:

- operation of equipment;
- maintenance;
- construction and installation.

3.6.12.3. Systematic (root) causes, *i.e.* underlying causes that resulted in appearance of physical and human level causes.

These are usually as follows:

- management system and principles;
- system of views and industrial practices;
- differences in attainments (language, terminology, methods, instructions, etc.).

3.6.13. Determine material damage (including environmental damage).

3.6.14. Prepare report on identified circumstances indicating incident direct and root reasons, specifically those related to the HSE Management System.

3.6.15. Prepare corrective measures aimed at reducing probability of such incidents repetition. During developing corrective measures, the following requirements should be met:

- “specificity”, *i.e.* recommendation should specifically indicate what actions need to be taken;
- “trackability”, *i.e.* recommendation should provide for a viable possibility to track its implementation;
- “personal administrative responsibility”, *i.e.* recommendation should provide for responsibility of a person to whom implementation of a given recommendation has been assigned;
- “quality”, *i.e.* recommendation should allow to solve a problem economically and with no additional difficulties;
- “deadline”, *i.e.* recommendation should provide for a timeframe within which it is subject to implementation.

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3.6.16. Put forward proposals regarding dissemination of lessons learned from an incident with notification to all interested persons. Lessons learnt should be developed for each registered incident, near miss incident, and other selected incidents if experience gained from such incidents appears to be valuable for sharing it with other CPC units.

3.6.17. Recommendations on taking disciplinary measures are not the Commissions prerogative and should be made by direct supervisor if he/she deems it necessary.

3.6.18. Technical investigation report regarding an incident shall be signed by all members of the technical investigation commission. In case when a member of the Commission refuses to sign a technical investigation report his/her dissenting opinion with a reasoned grounding of the refusal should be attached to it.

3.7. Execution of Results of Incident Causes Investigation

3.7.1. Following signing the Resolution, the Commission shall immediately proceed to its work and within five (5) business days shall develop an investigation report as per the form of Exhibit 1. Investigation time may be increased by the Investigation Commission Chair subject to incident nature and consequences and necessity in conducting additional researches and expert examinations.

3.7.2. The Commission shall develop a report on detected circumstances indicating direct and root causes of an incident, specifically those concerning the HSE Management System, and shall determine corrective measures connected with the incident.

3.7.3. Materials of technical investigation of incident causes shall include the following:

- resolution on appointment of commission for technical investigation of incident causes;
- report on incident causes investigation as per the form of Exhibit 1;
- report on the incident site inspection with necessary graphic, photo, and video materials in full color;
- written resolution of the Commission Chair on appointment of expert groups (if the need should be) and other Commission Chair's resolutions;
- opinions of experts (expert groups) regarding incident circumstances and causes with necessary calculations, graphic materials, *etc.*;
- memorandums of emergency response and restoration teams and units regarding progress in incident elimination, if they took part in it;
- protocols of interviews with witnesses and explanations of persons involved in the incident, as well as managers and specialists of the Region operating the hazardous industrious facility who are entrusted with ensuring compliance with industrial and fire safety requirements;
- certified copies of protocols and certificates regarding training and certification of personnel operating the facility and certified excerpts from occupational safety briefing logs;
- briefing papers on extent of inflicted damage and assessment of economic damage (including environmental) form incident;
- act concerning job related accident (serious, group, fatal accident) as per the established template (where there are injured persons);
- information on violation of industrial, fire, and environmental technical standards (indicating specific clauses of respective documents);
- resolution on extension of time for incident investigation (if investigation was extended);
- other materials characterizing incident and circumstances and causes of its occurrence and further development.

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3.7.4. List of materials of technical investigation of incident causes shall be determined by the Commission Chair subject to incident nature and circumstances. Materials of technical investigation of incident causes shall include a list of all attached documents.

3.7.5. Reports on all registered incidents and incidents with potentially high probability of grave consequences shall be executed in Russian and English.

3.7.6. The Commission Chair shall arrange circulation of incident investigation materials to the CPC General Manager, Field Operations, and General Manager, HSE, within three (3) days following completion of internal investigation and signing of the Report. Original investigation materials shall be kept in the regional units with Senior HSE Engineers (Lead HSE Engineers).

3.7.7. All scanned original materials relating to an incident must be entered into the Incident database, viz.:

- Form of the Initial and update notification to the Shareholders – into the “Notifications” section;
- Resolution re the Investigation Commission - into the “Investigation” section;
- Act of technical investigation of the incident causes, Act of internal investigation of the motor vehicle accident - into the “Investigation” section;
- Necessary investigation materials - into the “Investigation” section;
- “Lessons Learnt” form - into the “Investigation” section.

Predeveloped forms of the abovementioned documents in Word format in Russian and English are posted in section “Templates” right under the CPC Incident database on the HSE intranet page.

All actions documented in writing in the Act of investigation and Lessons Learnt form should be recorded in the Incident data base, in the “Actions” section, in Russian and English, indicating the responsible person and performance deadline.

HSE or Transportation Group staff members participating in incident investigation must upload the above listed documents into the Incident database and enter actions into the database section Actions, as well as interact with the persons appointed responsible for fulfillment of actions and within the appointed deadline introduce comments/adjustments regarding the actions fulfillment status in the column “Fulfillment commentaries” up to the moment when the action can be closed and deemed completely fulfilled.

Template of the Initial and update notification to the Shareholders should be uploaded into the Incident database by the Moscow Office HSE Administrative Assistant.

The foregoing approach to storage of investigation materials replaces recordkeeping of investigation acts in the Single Register for HSE records. Numbers of incidents under which they are registered in the Incident database should be written on respective original investigation acts.

3.7.8. Contractor, in accordance with its area of responsibility, shall appoint by its resolution employees responsible for conduct of incident investigation and reporting process, who shall also maintain communication between various industrial sites of Contractor and Company in the course of notification and investigation.

3.7.9. Accident with Contractor’s personnel occurred during work performance on CPC sites under the guidance of Contractor shall be investigated by the Contractor’s Commission with development of a

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report as per form H-1. Internal investigation of an accident shall be carried out by the CPC commission with participation of Contractor's representative. Based on the investigation results, a Report shall be developed as per the form of Exhibit 1.

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Template of the Report on Technical Investigation of Causes of Incident at Hazardous Industrial Facilities

REPORT OF TECHNICAL INVESTIGATION OF INCIDENT CAUSES

_____ 20__ .

1. Name of organization, form of its incorporation, form of ownership, and address:

2. Commission membership:

Chair: _____
(initials and last name, title)

Deputy Chair: _____
(initials and last name, title)

Commission Members: _____
(initials and last name, title)

3. Characteristics of organization (facility, section) and incident site.

This section, along with information on the time of hazardous industrial facility commissioning and its location, should include design data and information on actual design implementation; opinion on the hazardous industrial facility condition before the incident; operational mode of the facility (equipment) before the incident (approved, actual, and designed); indication whether similar incidents occurred at this section (facility) previously; and information on how license requirements and conditions, regulations, and declarations of safety were observed.

4. Qualification of operating personnel, specialists and responsible persons involved in an accident (where and when occupational safety training and briefing and assessment of knowledge by qualification commission were undergone).

5. Incident Circumstances.

Describe accident circumstances and scenario of its development, provide information on injured persons, and indicate what factors lead to the accident situation and its consequences. Describe how technical process and labor process progressed and actions of the operating personnel and officers. Describe sequence of events.

6. Technical and Organizational Causes of Incident.

Based on the technical documentation review, incident site inspection, interview of witnesses and officers, and expert opinion, the Commission should draw conclusions regarding the incident causes.

7. Measures for the Incident Causes Elimination.

Describe measures for elimination of the incident consequences and prevention of similar incidents and timeline for implementation of incident elimination measures.

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8. Incident Consequences

This section should include description of the following:

- damages to technical devices, buildings, and structures, destruction of infrastructure facilities, *etc.*;
- expenses for elimination of incident consequences as at the time of investigation;
- direct losses (describe production assets, tangible assets, and third parties' property suffered as the result of the incident);
- losses of operating organization and third parties from production downtime.

Technical investigation of the incident causes has been conducted and report has been developed on: _____

(date, month, year)

Exhibit: Incident Investigation Materials on ____ pages.

Signatures

Chair: _____
(initials and last name, date)

Commission Members: _____
(initials and last name, date)

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Nonregistered Incidents

Incidents, which are recorded but do not affect statistics:

- Cases of first aid provision;
- Potentially hazardous situations;
- Unsafe conditions;
- Unsafe action;
- Minor motor vehicle accident;
- Property damage;
- Oil spill less than seven (7) tons onshore or 0.1 tons offshore.

Registered Incidents

Any incident, which is recorded in statistics:

- Fatality;
- Permanent partial labor inability;
- Permanent full labor inability;
- Temporary labor inability;
- Restricted labor ability;
- First medical treatment;
- Occupational illness;
- Catastrophic, major, and serious MVA's;
- Oil spill over seven (7) tons onshore or 0.1 tons offshore.

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Motor Vehicle Accident Investigation Procedure

Upon receipt of information on a MVA with injured persons, or in other cases where necessary (in case of a major catastrophic MVA; nonstandard cases; in case of an accident from which important lessons can be learned, *etc.*), representatives of the Transportation Group, HSE, and Security Service should visit the accident place.

Any CPC officers that arrive at the accident place earlier than the Road Patrol Service (RPS) (Traffic Police (TP)) officers should take appropriate measures provided for by the RF/RK Road Traffic Regulations (RTR) with respect to providing aid to victims and their evacuation to the closest medical facility, safeguarding the accident traces, TV('s) and cargo involved, preventing secondary accidents, and recording contact details of the accident witnesses. CPC officers can, by permission from the RPS (TP) officers, do the following:

- survey the accident area and damaged TV's;
- clarify the accident circumstances with the drivers and other witnesses, whose explanations may become relevant for clarification of the accident circumstances;
- review the Protocol of inspecting the accident area and TV's, and the MVA Schematic;
- take pictures of the general accident area view, TV position, traces of braking, skidding or rolling and their tracing to the specific TV, the place where mud or glass, *etc.* crumbled on the ground after the collision, its shape and size, place of striking a pedestrian, any other items that could affect the accident occurrence (where necessary, attention of the RPS (TP) officers should be drawn to the necessity of recording such information in the Place Inspection Protocol);
- review all relevant documents, including driving licenses, TV registration passport, routing slip, cargo shipping documents.

In case such visit to the MVA place by CPC officers is not possible (due to business or any other reasons) or expedient (remoteness, minor damage with no victims, *etc.*), then the driver is expected to obtain respective executed documents on site on his own. In case any difficulties or questions arise during executing the documents, the driver should request consultation from the Transportation Group staff.

Internal investigation should be conducted by a commission specially established by a resolution of CPC General Director. Normally, the regional commission should include:

Regional Manager as the Commission Chairman;
 Head of the Regional Transportation Services (Regional Transport Engineer) as the Commission Member;
 Regional Security Manager (Regional Security Coordinator) as the Commission Member; and
 Regional HSE representative as the Commission Member.

Normally, the Moscow Office commission should include:

Transportation Manager as the Commission Chairman;
 Security representative as the Commission Member;
 HSE representative as the Commission Member; and
 Transportation Group representative as the Commission Member.

Where required, other specialists may also be included in the Commission.

Internal investigation may be not conducted by mutual decision of the HSE General Manager and Transportation Manager if minor MVA occurred not through CPC driver's fault, accident circumstances are obvious, and no lessons useful for the Company can be learned from the accident.

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The goal of a MVA investigation is to determine objective direct causes and conditions combination of which lead to the MVA, as well as its underlying (root) causes. Based on the internal investigation results the Commission should draw a conclusion whether the accident was the result of the participants' incorrect actions or a combination of events that lead to negative consequences.

With the view of ensuring qualified and efficient investigation of accidents, the following basic principles should be met:

- timelines and promptness of investigation;
- competency and authority of persons conducting investigation;
- completeness, consistency, and objectiveness of investigation in accordance with the principles set forth in this Procedure;
- widespread dissemination of lessons learnt and improvements in the road traffic security management system as the most efficient method to prevent similar accidents.

Internal investigation should establish the following details:

1. Date and exact time (local) of accident;
2. Place of the accident:
 - if it occurs in a city/village, then indicate the district, street, building number and another reference points;
 - if it occurs on a road, then indicate the following:
 - road category and, if the accident is connected with poor road conditions, name of the organization in charge of the road maintenance;
 - kilometer point of the road or distance to the nearest settlement.
- 2.1. Road and traffic conditions under which the MVA occurred.
3. Type, make, model and plate number of TV (other TV's involved in the event);
4. Accident type;
5. Information on other persons involved in MVA;
6. Information on victims. Number of dead and injured persons (including drivers, pedestrians and/or passengers and their names and type of injuries, if possible);
7. Nature and degree of TV and cargo damage, as well as damage preliminary cost;
8. Who was driving the vehicle, full name, permitted TV categories, work experience (total driving experience, service term in CPC and on the TV in question), driver's performance as per the report on IVMS "Safety Result" for the last year; condition of the driver: in good health/sick, sober/under the influence of liquor (drugs) (per doctor's conclusion only); and whether the fact of using medicine products affecting driver's reaction has been established or took place;
9. Date of obligatory periodical medical examination conduct and date and time of pre-trip medical examination conduct;
10. Information whether the driver was involved in MVA previously, whether cases of violating RTR, CPC standards of ensuring safe motor vehicle operation (CPC standards) and/or corporate discipline occurred before;
11. Whether the driver was deprived of the right to drive TV;
12. Transportation type: intercity, city, suburb; trip purpose; specific transportation route (point of departure and destination). Cargo type and nature (hazardous, large-size, long, *etc.*). Actual load, actual passenger capacity. Whether the TV was used for the purpose intended, whether a deviation from the route took place. Time of the driver's shift the accident occurred at, duration of the inter-shift recreation, lunch/rest break arrangements during the shift, and duration of continuous driving after the break;
13. TV technical condition before going along the route and whether any technical failures have been detected after the MVA;
14. Date of providing the latest maintenance service.

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Date of providing the latest current repairs.

15. Date of providing the latest briefing (seminar, training, *etc.*) on the matters of road traffic safety, occupational health and labor safety;
16. Violations resulted in MVA and persons guilty in the accident as per conclusion of the RPS (TP) officers, agency of inquiry or investigative authorities.
17. Causal relation between the MVA occurrence and violations of CPC standard requirements, as well as possible systematic problems. Justification of a trip in terms of business needs if the trip was in unsafe conditions (bad weather conditions, driving during hours of darkness, *etc.*);
18. Information obtained by means of IVMS and dashboard camera should be analyzed with the view of investigation and detection of the MVA main reasons.

People are the main source of information. Therefore, special attention should be given to interviews. First and foremost, accident victim, witnesses, and persons involved should be interviewed. People involved in the accident should be interviewed as soon as possible.

Specific circumstances of an interview is determined by conditions of its conduct subject to victim's medical condition and general state, establishing positive interest and attitude of interviewed persons to circumstances of the accident being investigated, establishing quiet working atmosphere, tactful and polite not only to the victim, witnesses and persons involved in the accident but also to operations heads, and correct explanation of investigation objectives and tasks.

It is recommended that maximum number of facts be found out and the level be reached when main factors contributed to the accident become clear.

Interview should be started from general questions enabling a person involved in an accident to provide general information on all aspects of what happened. After that special and specific questions should be asked to narrow the subject and to hear more details.

Interview and obtained investigation results are necessary for determining systematic causes of an accident and for taking corrective measures to prevent similar accidents in future. The following several questions are proposed to aid the Commission (*who, what, where, when, how, and why*), which should be asked at all stages of investigation. It is necessary to ask free-answer questions. Question *Why?* should be asked with care as it may often be perceived as accusation and may hinder obtaining reliable information.

Only after that closed questions should be asked to which short answers, *i.e. Yes or No*, can be given. The Commission Members need to attentively listen to interviewees, not interrupting them and recording necessary information on paper.

To obtain better results of an interview, attention should be paid to the following:

- It is recommended that correctness of understanding what has been said be demonstrated by repeating key points out loud. Thus it will be demonstrated that the Commission Members are listening to an interviewee and understand what he/she is saying;
- In case of interviewing persons suffered in MVA, sympathy with them should be expressed;
- Interview will be successful if it does not turn into interrogation. To that end the following should be avoided: having a preconceived opinion, manifesting impatience, blaming, accusing, and not providing sufficient time for interview;
- The task consists in obtaining maximum objective information that will enable understanding actions of persons involved in an accident and developments prior to the moment of MVA;
- Following completion of interviewing a staff member driven a vehicle, it is necessary to interview all passengers and witnesses (company employees) of an accident; where possible,

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- passengers/witnesses should be interviewed individually so that evidence of one passenger/witness would not influence on evidence of other one;
- results of interviews of victims, witnesses, and persons involved in an accident should be executed in the form of written explanations or interview protocols. Such explanations should not be overloaded with unnecessary particulars and details having no direct relation to accident circumstances.

Documents relating to MVA should be divided into two groups:

Regulatory documents:

- Road Traffic Regulations; basic provisions for admitting TV to operation and responsibilities of officers in ensuring road traffic safety; RF Code of Administrative Offences; technical regulations on wheeled TV safety;
- TV certificate of title; TV registration certificate; test card; insurance policy;
- GOST standards and regulatory documents;
- Driver license; medical certificate;
- Citations of state supervisory agencies.

Corporate requirements:

- Company policies, procedures, and instructions;
- Company resolutions;
- Audit results; reports on implementation of planned actions;
- Log book on providing road traffic safety briefings;
- Log book on conducting pre-trip medical examination;
- Trip sheet.

Careful description of accident circumstances establishes correct prerequisites for looking into actual causes of an accident and enables conducting further comprehensive analysis. During description of circumstances all main investigation results must be reflected. Assumptions, guesswork, and doubtful statements are inadmissible.

Determining direct and systematic accident causes is the main objective of the Commission investigation as only on the condition that systematic causes have been determined correctly it is possible to be confident in effectiveness of designated preventive measures and corrective actions for preventing similar accidents in future.

If the Commission has established that one of the MVA constituent factors was driver's dangerous acts, an attempt should be made in this case to find out why the injured person performed those dangerous acts. If existence of a hazardous condition has been established, its source should be detected and eliminated.

If the Accident Investigation Commission has arrived to incorrect conclusions regarding causes lead to occurred accident, it is possible to deem that such commission failed to accomplish its main investigation task to determine measures for eliminating causes that may lead to recurrent satiation. That is why it is important that the Commission Members be well aware of types of activities, which were connected with the accident occurrence. They should assess evidences of both driver and passengers/witnesses using their practical experience, training, and abilities to make sound judgments. The Commission should not simply develop a report on accident facts but should conceive obtained evidences, its own observations, and opinions of other people. The Commission Members should display acumen in determining causes of an accident.

Following determination of accident critical factors, the Commission should establish direct causes. To that end, all direct causes should be analyzed, both related to actions and conditions. It may be that the established critical factors are direct causes of an incident.

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Following determination of direct causes of an incident the Commission should establish interrelation between critical factors and systematic causes. Systematic causes relate both to personal factors and work factors and cover practically an entire range of operating activities. There may be several causes of that. Each cause should be supported by evidences.

During accident investigation it should be always remembered that there should be strong interrelation between circumstances, causes, and corrective measures (causes follow from circumstances and measures follow from causes).

As soon as accident causes have been established, corrective measures should be developed at once with the view to prevent repetition of similar accidents. Such recommendations may relate to a specific trip, specific situation, and to entire transportation process or region.

The corrective measures attributes are as follows:

- consideration of established systematic reasons;
- consideration of events connected with accident;
- bringing of the system into order;
- clear determining of planned measures;
- setting practical, realistic, and achievable goals;
- risk elimination and reduction;
- determining of priority measures;
- determining of final result.

Corrective measures can be divided into preventive and protective. Preventive measures prevent influence of hazard for all by means of the following: hazard elimination; hazard isolation; and physical confinement of access to hazard. Protective measures protect one employee by means of the following: development of instructions and rules; providing training and briefing; and installing warning signs.

Selection of proper corrective measures is a key step in protecting employees. Effectiveness of developed corrective measures needs to be taken into account. During developing corrective measures the following parameters should be considered:

- probability of hazard impact;
- severity of consequences from hazard impact;
- frequency of hazard impact;
- costs for the Company.

During developing corrective measures the following requirements should be met:

- specificity, *i.e.* recommendation should specifically advise what needs to be done;
- possibility to control fulfillment, *i.e.* there should be certain quantitative parameters enabling to know whether a recommendation will be fulfilled;
- personal responsibility, *i.e.* a recommendation should indicate a person responsible for fulfilling it within established time;
- quality, *i.e.* indication whether an adopted measure will be able to prevent or significantly decrease probability of accident repetition; to what extent implementation of the measure is realistic, what its economic efficiency in terms of costs, what technical and practical possibilities exist for implementing it; and what problems may arise as the result of its implementation.

Based on corrective measures proposed by the Commission measures should be developed that must be specific and must indicate officers who will be responsible for practical implementation of each measure and time of its implementation.

Technical and organizational arrangements should be indicated separately. The shortest possible time

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should be provided for their implementation.

Information on implementation of measures should be presented not later than in one month following the date of an act execution. If longer time is required to implement measures, then reason for extending the implementation time should be indicated.

Upon clarification of MVA circumstances, the Internal Investigation Commission should develop an act per the form provided below, which should be kept with the Regional Transport Services (Moscow Office Transportation Group) and may be used, where required, for the purposes of objective examination in the court and investigation agencies, traffic police, insurance companies, *etc.*

The Act should be supplemented with the following:

- copy of the MVA Place Inspection Protocol;
- copy of the TV Inspection Protocol;
- copy of the MVA Schematic;
- copy of the driver's medical testing for soberness (in case the driver was taken for such test);
- explanations of the drivers and witnesses (if any);
- copy of the accident technical expertise (in case such expertise was undertaken);
- list of those died and injured with indication of full names, dates of birth, places of work and residence, diagnoses (by a physician), addresses of medical facilities where the injured are taking treatment;
- copies of the driver briefing and training logs;
- information presented in the form of respective reports developed by IVMS; and
- disk with video files of a video recorder (outdoor security cameras).

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“APPROVED BY”
CPC-R/K Deputy General
Director, General Business

_____/_____/_____
(signature) (name)
_____ 20 ____

**ACT
OF INTERNAL INVESTIGATION
OF A MOTOR VEHICLE ACCIDENT**

(organization name)

Date of the Act issue _____
(day, month, year)

Commission including:

Chairman _____

Commission Members _____

(name, position)

The Commission established by CPC-R (CPC-K) Resolution # _____ of “____” _____ 200____, having inspected the place of the accident, reviewed relevant documents, inspected TV, and interviewed the MVA participants and witnesses, has established as follows:

1. The event took place _____
(date, time and driver's work hour)

2. Place of the accident _____

(city, street, federal/local road)

2.1. Road conditions

2.1.1. Elements of the road plan view and alignment _____
(straight in plan view, curved in plan view, horizontal inclination, falling gradient end, road rise beginning, rise peak, falling gradient beginning)

2.1.2. Road structures and arrangements _____
(bridge, flyover bridge, tunnel, pedestrian crossing, crossroad, section of a road, public transport stop, signaled railroad crossing manned/ unmanned, unsignaled railroad crossing)

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- 2.1.3. Width of carriageway (m) _____
- 2.1.4. Shoulder width (m) _____
- 2.1.5. Sidewalk width (m) _____
- 2.1.6. Separating strip width (dm) _____
- 2.1.7. Road surface type _____
(asphalt concrete, asphalt concrete with surface treatment, cement concrete, chipped/ gravel surface with applied cementing materials, top soil or other type of surface)
- 2.1.8. Carriageway condition _____
(dry, wet, soiled, recent surface treatment, snow covered, glaze ice, treated with deicing agents, with packed snow)
- 2.1.9. Illumination _____
(day time, in the hours of darkness: switched on, not switched on, lacking)
- 2.1.10. Weather conditions _____
(fine, cloudy, fog, rain, snowfall, abrupt wind, hurricane)
- 2.1.11. Road conditions contributing to the MVA occurrence _____
(rough riding surface, surface with defects, low adhesion characteristics of surface, unsatisfactory condition of road shoulders, too low shoulder relative to the carriage way, mismatch between the bridge clear headway and road carriageway width, poor visibility of traffic lights or their malfunctioning, lacking or poor visible horizontal or vertical traffic control demarcation, trees (supports) on the road shoulder, existence of exterior advertising, lacking sidewalks (pedestrian ways), lacking fences in required places, insufficient and/or malfunctioning lighting, carriageway narrowing (due to snow, construction materials, etc.), existence of snow banks restricting visibility or making the carriage way narrower, lacking fences (signalization) in the work zones, poor visibility of road signs or their lack, restricted visibility, malfunctioning; signalization at the railroad crossing, lacking guiding devices and/or retroreflective elements on them)

3. Make, model, year of manufacture and plate number of the CPC-R/K vehicle _____

4. Type of the accident _____
(collision; tipover; tripping over: stationary MV, obstruction, pedestrian, bicyclists, animal transport; passenger fall; other type of MVA)

5. Other participants of the event (vehicles)

Make, model	Plate Number	Driver's full name	Ownership of TV
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6. Victims

Total: died _____, injured _____

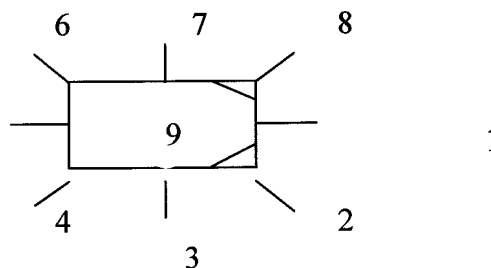
#	Name	Age	Died/injured (injury nature and severity)	Driver/pedestrian/passenger
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7. TV damages

7.1. Preliminary damage cost, as per the service station conclusion, from damaging the CPC TV is RUR (KZT) _____.

7.2. Spots of the greatest damage to the TV:



7.3. Full list of visual damages _____

8. Full name of the CPC vehicle driver _____
Date of birth _____

Total years of driver experience _____
including with CPC _____
on the said vehicle _____

Driver's performance as per the report on IVMS "Safety Result" for the year _____ %

Condition of the driver (per a doctor's conclusion) _____
(in good health/sick, sober/ under the influence of liquor (drugs))

Use of medicine products _____
(yes/no)

9. Date of the pre-trip medical examination, date of the mandatory regular medical examination _____

10. Violations

10.1. History records of motor vehicle accidents _____,
violations of the Road Traffic Rules, discipline regulations, and CPC standards _____

10.2. Previous withdrawals of the license _____
(when and why)

10.3 Use of a mobile telephone during driving (as per the information from itemization of calls)

(yes/no)

10.4 Violations as per the data of IVMS / video recorder during 10 minutes before the MVA

(yes/no)

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10.5 Justification of a trip in terms of business needs _____
(yes/no)

11. Working conditions and recreation

11.1 Time the driver has worked during the shift before the MVA occurrence _____
(hours)

11.2 Length of recreation time between the shifts _____
(hours)

11.3 Existence and length of the break for lunch/recreation during the work shift
_____;
(yes/no)

(hours)

11.4 Length of continuous driving after the break _____
(hours)

12. TV was carrying _____
(what cargo/passengers)
per Routing Slip # _____ dated _____
routing _____
use for personal needs _____
(yes/no)

Unauthorized trip _____
(yes/no)

13. TV pre-trip condition, who conducted daily technical inspection before departure _____

13.1 Technical failures found after the MVA _____

(service brake system, trailer break system, steering system, exterior lights, tread pattern wear, nonconformity of tires to the TV model, malfunctioning hooking device, and other malfunctions)

14. Date of the latest maintenance/repair _____
Defects detected _____
Existence of records in the Log of Failures _____
(date, failure essence, record about elimination)

15. Date of the latest briefing (seminar, training, etc.) provided to the driver on the road traffic safety, occupational health and labor safety _____

16. Description of the accident circumstances _____

17. Completed interview of (explanations or protocol should be attached):

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driver _____;
(yes/no)
passenger _____;
(yes/no)
witness _____;
(yes/no)

18. Violations that caused the MVA, as per conclusion of the RPS (TP) officers agency of inquiry or investigative authorities: _____

19. Persons guilty in the MVA, as per conclusion of the RPS (TP) officers agency of inquiry or investigative authorities: _____

20. Direct MVA causes: _____

21. Systematic MVA causes: _____

22. Persons guilty in the MVA as per the Commission conclusion: _____

23. Other conclusions of the Commission: _____

24. Corrective measures: _____

Commission Chairman _____ / _____ /

Commission Members: _____ / _____ /

_____ / _____ /

_____ / _____ /

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COMMUNICATION “LESSONS LEARNED”

The goal of “Lessons Learnt” is to provide managers at other Company sites with useful summary on certain incident so as they could use that information for preventing similar cases or increasing quality of investigation of other incidents. Lessons learnt should contain information on root causes of an incident and proposed corrective measures, which other Company units and other organizations will be able to use in their work.

“Lessons Learnt” materials should be prepared by the Commission for Investigation of Incident Causes.

Contractor is obligated to draw up communication “Lessons Learnt” and circulate it through CPC HSE.

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LESSONS LEARNT TEMPLATE



ИЗВЛЕЧЁННЫЕ УРОКИ LESSONS LEARNT



Дата происшествия: Incident date: Объект: Facility: Процесс/Оборудование: Process/Equipment unit: Местоположение: Incident location: Тип происшествия: Incident type:	Краткое описание происшествия: Brief description of Incident:	Основные причины: Main Root Causes:	
		Извлечённые уроки: Lessons Learnt:	

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CHANGE RECORD PAGE FORM

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