

**Federal Nuclear and Radiation Safety Authority of Russia  
(RF Gosatomnadzor)**

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**FEDERAL RULES AND REGULATIONS  
IN THE FIELD OF ATOMIC ENERGY USE**

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APPROVED  
by Statement  
of RF Gosatomnadzor  
Dated 28 March 2000 No 1

**Rules of Investigation and Accounting of Violations in Management of  
Radiation Sources and Radioactive Substances Used in National Economy**

**NP-014-2000**

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UDK 621.039

**RULES of INVESTIGATION and ACCOUNTING for BREAKAGE in MANAGEMENT of RADIATION SOURCES and RADIOACTIVE SUBSTANCES APPLIED in NATIONAL ECONOMY. NP- 014- 2000**

**Gosatomnadzor of Russia, Moscow, 2000**

The present Federal Rules are the normative document that establishes procedure of breakage investigation and its accounting for at Objects of Atomic Energy Use where the management of radiation sources, radioactive substances & products on its basis as well as management of radioactive waste is carried out during usage of radioactive substances in Industry, performing of Research and Investigation and other works, and in medical investigations as well.

The present Rules are being issued for the first time.

The present Rules are produced by specialists of RF Gosatomnadzor SEC NRS (Ye.G.Volilin, I.V.Kaliberda, T.V.Kostenko, V.P.Sloutsker, L.P.Soloyiev), RF Gosatomnadzor Headquarters (M.V.Mikhailov, V.Ya. Reka, Ye.M.Latypov), RF Gosatomnadzor Volga Regional office (L.V.Medvedev), RF Minatom (I.V.Baranov).

In producing these Rules the comments and proposals of Organizations in interest are taken into account.

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### List of Abbreviations

<b>KY</b>	Control Level	<b>CL</b>
<b>ОИАЭ</b>	Object of Atomic Energy Use	<b>OAEU</b>
<b>ПХ</b>	Point of Storage	<b>PoS</b>
<b>РАО</b>	Radioactive Waste	<b>RW</b>
<b>РВ</b>	Radioactive Substances	<b>RSu</b>
<b>РИ</b>	Radiation Source	<b>RS</b>

## Terms & Definitions

1. **Decommissioning of PoS Rsu** – activity carried out after removal of RSu from PoS and directed to exception of PoS usage according to its designation.
2. **Control Level** – is established by OAEU Administration upon agreement with Russian State Health & Epidemic Supervision Body. Its numerical value shall consider the level of radiation safety achieved at OAEU and shall ensure conditions which result in radiation impact lower than the allowed one.
3. **Non-radiation Event** – breakage resulting in loss of RS control that caused by equipment malfunction, incorrect actions of workers (staff), Acts of God or other causes, that might lead to unplanned exposure of people and (or) radioactive contamination of environment.
4. **Management of RSu, RS & RW** – all types of activity related to operation (decommissioning) of RS, storage and transportation of RSu, collection, transportation, processing, storage and (or) disposal of RW, where:

**Collection of RW** – concentration of RW at specially designated and equipped places;

**Transportation of RSu and RW** – movement of RSu and RW with application of transport and hoisting devices;

**RW processing** – process operations on changing of aggregate condition and (or) physicochemical properties of RW to be performed in preparation of RW for storage and (or) disposal;

**Storage of RSu & RW** – allocation of RSu and RW in PoS and in the RW repository, correspondingly, with the intention of its subsequent withdrawal;

**Disposal of RW** – allocation of RW in the repository without the intention of its subsequent withdrawal;

**RW PoS, RW Repository** – complex of special constructions and equipment designated for storage of RSu and (or) storage and disposal of RW, correspondingly.

5. **RS Point of Storage** – stationary Objects and Constructions not related to Nuclear Installations designated for storage or final disposal of RSu.
6. **Radiation Accident** – breakage in case of which the loss of RS takes place that caused by malfunction of Equipment, human error, Acts of God or by another causes led to unplanned irradiation of people and (or) environment radioactive contamination exceeding the values regulated by Radiation Safety Norms (for the present Document).
7. **Radioactive Substances** – Substances in any kind of aggregate state that contain radionuclides with activity subject to requirements of Radiation Safety Norms.
8. **Radioactive Waste** – radioactive waste not designated for the following usage, in any kind of aggregate state in which the content of radionuclides exceeds levels defined by the Radiation Safety Norms.
9. **Radiation Event** – breakage in case of which the loss of RS takes place that caused by malfunction of Equipment, human error, Acts of God or by another causes led to unplanned irradiation of people and (or) environment radioactive contamination exceeding the control level but not exceeding values regulated by Radiation Safety Norms.
10. **Radiation Sources** – Complexes, Installations, Apparatuses, Equipment and Items that contain Radioactive Substances but not related to Nuclear Installations.
11. **Breakage Investigation** – complex of measures directed to reveal within the fixed term of class of breakage, of initial event, trends, of technical and (or) organizational causes and consequences of disturbances while handling with RSu, products basing on them & with RW, as well as to preparation of recommendations on safe operation of Objects of Atomic Energy Use.
12. **Accounting for Breakages** (in the present Rules) – registration of Breakages upon the Classes.
13. **Repository of RW** – stationary Objects & Constructions not related to Nuclear Installations & RS designated for storage or final disposal of RW.

## 1. GENERAL PROVISIONS

1.1. The present Rules establishes the procedure of Breakage Investigation and Accounting for in the following cases:

- Handling with RSu, Products on their basis and RW;
- Usage of RSu in medical examinations, in industry, in Research & Development and other kind of Works;
- Performance of work and rendering services for the Objects of Atomic Energy Use including the case of implementation of Contracts (Agreements) for export of import of Radioactive Substances and Products on their basis.

1.2. Breakage Investigation and its Accounting for is performed with the aim of:

- Revealing causes of Initial Event, Trends, Consequences and Breakage Class;
- Decision taking with regard to improve safety of Objects of Atomic Energy Use;
- Statistical Accounting for Breakage;
- Providing information about the breakage for the Staff and Population in case of irradiation and environment contamination threat as well as regular informing of Local Authorities, State Regulatory Bodies and Public Authorities of RF Subjects

1.3. The present Rules are applied for:

- Legal persons and individuals that handle the RSu, Products on its basis and RW.

1.4. The present Rules are not applied for legal persons and individuals who perform their activity of the following type:

- Operation of Sources that generate ionizing irradiation;
- Handling with Radioactive Substances, Products on its basis and RW at Nuclear Installations including Fuel Cycle Enterprises, at Points of Storage of RSu and RW Repositories as a part of them, as well as for the case of investigation of theft.

## 2. BREAKAGE CLASSES AND PROCEDURE OF ITS DEFINING

2.1. depending on consequences, the breakages are divided into Classes.

The following three classes are established:

- Radiation Accident - Class A;
- Radiation Event - Class P-1;
- Non-radiation Event – Class P-2.

The Breakage Classes are given in the Table

### Breakage Classes

No	Breakage Class	Signs, causes & consequences of breakages
1	<b>A</b> (Radiation Accident )	Loss of RS control caused by malfunction of Equipment, Human Error, Acts of God or other causes (breach of container housing integrity of RS, equipment with Radioactive Substances and RW including radiation packages, transport casks, destroy of irradiation lay RS, contamination of RS container housing internal surface) that have led to unplanned irradiation of people and (or) environment radioactive contamination exceeding values regulated by Radiation Safety Norms.
2	<b>P-1</b> (Radiation Event)	Loss of RS control caused by malfunction of Equipment, Human Error, Acts of God or other causes (breach of container housing integrity of RS, equipment with Radioactive Substances and RW including radiation packages, transport casks, destroy of irradiation lay RS, contamination of RS container housing internal surface) that have led to unplanned irradiation of people and (or) environment radioactive contamination exceeding control levels but not exceeding values regulated by Radiation Safety Norms.
3	<b>P-2</b> (Non-Radiation Event )	Loss of RS control caused by malfunction of Equipment, Human Error, Acts of God or other causes (breach of container housing integrity of RS, equipment with Radioactive Substances and RW including radiation packages, transport casks, destroy of irradiation lay RS, contamination of RS container housing internal surface breach of physical protection, unauthorized access to the RSu, Products on their basis and to RW, losses and thefts), that would lead to unplanned exposure to radiation of people and (or) radioactive contamination of environment.

**2.2.** Numerical values of radiation normative to be used for establishing the Breakage Class shall be adopted in accordance with actual Radiation Safety Norms (i.e. being in force at the moment of producing of the present Rules) and (or) other Regulations produced on their basis (see Tables 1, 2, 3, 4 of Appendix 1).

**2.3.** Breakage Class shall be defined upon the meanings of radiation conditions characteristics to be measured (calculated) at the place of breakage (irradiation dose rate or another parameters).

### **3 Procedure of investigation and Accounting for Breakage**

#### **3.1. General Provisions**

**3.1.1.** Information on Breakages shall include:

- Operative Message about the Breakage;
- Preliminary Message about the Breakage;
- Report or Act/Protocol on Breakage Investigation.

**3.1.2.** The Administration of the Object of Atomic Energy Use shall ensure transfer of operative message about each breakage subject to accounting for and investigation in accordance with the requirements of the present Rules. The Operative Message shall be transferred via the channel of any type of communication that ensures operative receiving information within 1 hour after revealing the breakage.

The person appointed by the Object of Atomic Energy Use (OAEU) Administration transfers the Operative Message.

**3.1.3.** The Operative Message shall contain the following information:

- Name of the OAEU;
- Title and type of RS, Products on RS basis and equipment with RW, transport meaning used for transportation of RS, Products on RS basis and RW;
- Date and time of breakage;
- Breakage characteristics, preliminary defined breakage class;
- Absence (availability) of victims suffered by the irradiation;
- Luck (availability) of radioactive contamination of environment;
- Name, family name and duty post of the person transferring the Operative Message.

**3.1.4.** The Operative Message shall be transferred to the following addressee:

breakage related to Class A:

- Duty Person of the Federal Executive Body under the jurisdiction of which the OAEU and the Utility are allocated;
- Federal Nuclear and Radiation Safety Authority (RF Gosatomnadzor);
- Duty Person of the RF Gosatomnadzor Regional Office;
- Duty Person of the RF Ministry of Health and to the Duty Person of the RF Ministry of Health & Epidemiological Inter-regional Office (RF Gossanepidnadzor);
- Duty Person of the Regional Office of RF Ministry of Emergency;
- Local Bodies of RF Federal Security Service, RF Ministry of Interior, and General Authority of Fire Protection Service of RF Ministry of Interior serving the OAEU;
- Hydrological & Weather (Rosgidromet) Sub-division;
- Duty Person of the State Ecology Committee (RF Goskomecology), Regional Office;
- Administration Head of the Town and other RF Subjects on the territory of whom the Accident occurred;

breakage related to Class P-1 and P-2:

- Duty Person of the RF Gosatomnadzor Regional Office;
- Local Bodies of RF Federal Security Service, RF Ministry of Interior, and General Authority of Fire Protection Service of RF Ministry of Interior serving the OAEU;
- Duty Person of the RF Goskomecology Regional Office;
- Duty Person of the Regional Office of RF Ministry of Emergency;

**3.1.5.** Preliminary Message about the Breakage shall be signed by the OAEU Administration and transferred via the channel of any type of communication within 24 hours after reveal of breakage.

**3.1.6.** Preliminary Message shall contain the following information:

- Name of the OAEU;
- Title and type of RS, Products on RS basis and equipment with RW, transport meaning used for transportation of RS, Products on RS basis and RW;
- Date and time of breakage;
- Characteristic of breakage;
- Data on radiation impact to the staff, population & environment;

- Status of RS, Product on RS basis and equipment with RW, `of transport meaning used for RSu (Product on RS basis and RW) transportation as it is at the moment of transfer of message including the name of breakage and the main corresponding data, the allocation, character and possible cause of breakage as well as urgent measures taken for mitigation of consequences of breakage;
- Preliminary defined Class of Breakage;
- Name, family name and duty post of the person transferring the Preliminary Message.

**3.1.7.** Preliminary Message on the Breakage shall be addressed to the same as the Operative one (see paragraph 3.1.4.).

**3.1.8.** Report or the Act on Investigation of Breakage shall be produced by the Commission on Breakage Investigation (hereinafter referred as a Commission). The typical structure and content of Commission Report on Breakage Investigation at the OAEU are given in the Appendix 2, the typical form of Act/Protocol on Breakage Investigation is provided by Appendix 3. The Report is produced by the Commission in case of Accident investigation, while the Act is made in case of radiation and (or) non-radiation event investigation.

**3.1.9.** Not later than two days after the signing by the Chairman of Commission, the Report or the Act shall be sent to the Federal Executive Body under whose jurisdiction the OAEU is allocated, to the RF Gosatomnadzor Department on Supervision for safety in National Economy, to the RF Gosatomnadzor Regional Office in charge with the OAEU, to the Regional Office of Health & Epidemiological Supervisory Body (RF Gossanepidnadzor) and to the Institutions the representatives of which were attracted to the activity of Commission.

## **3.2. Breakage Investigation**

**3.2.1.** Breakage Investigation shall be carried out at two stages – the preliminary and the basic one.

**3.2.2.** Administration and the OAEU Personnel shall hold the preliminary stage of investigation In case of breakage during all types of activity excepting transportation out of the OAEU Site.

**3.2.3.** At the preliminary stage of investigation (that starts from the moment of revealing the breakage and lasts during 24 hours) the OAEU Administration shall:

- Reveal the availability and character of breakage;
- Make preliminary conclusion with regard to the Class, initial event, trends and possible causes of breakage;
- Take measures for keeping initial information that allows to clarify the initial event and breakage trends;
- Arrange conditions for holding investigation at the basic stage.

Simultaneously, the OAEU Administration is obligated to take measures to prevent following propagation of breakage or its consequences.

**3.2.4.** Detection of breakage and defining of its Class shall be performed in accordance with Section 2 and Appendix 1.

**3.2.5.** For carrying out of Breakage Investigation at the basic stage the OAEU Administration shall arrange a Commission that consists of Chairman, Deputy and members. The Chief Engineer (Deputy Chief Engineer) or the Head of corresponding OAEU sub-division shall be a Chairman of Commission.

Procedure of organizing and carrying out of investigation at the basic stage shall be defined by the Chairman of Commission upon the results of investigation obtained at the preliminary stage.

**3.2.6.** The Order to appoint the Commission, with providing composition and time of its commitment shall be signed by the Head of OAEU Administration. The same Order defines the procedure of involvement of independent Experts.

**3.2.7.** The employee of OAEU and Organizations performed works and rendered services for OAEU as well as the independent Experts shall be included into the Commission. In case of radiation events the Experts on radiation safety shall be involved also. In case of necessity, upon the demand of Head of RF Gosatomnadzor Regional Office of RF Gossanepidnadzor (or of the person empowered by them) the representatives of RF Gosatomnadzor Regional Office and the RF Gossanepidnadzor Territorial Body might be included into the Commission.

**3.2.8.** The Chairman of Commission shall inform its members about the date and place of beginning of its activity. The same information shall be provided to the RF Gosatomnadzor Regional Office that is in charge of OAEU supervision, as well as to the Utility.

**3.2.9.** For the period of investigation the Commission Members shall be at the disposal of Commission Chairman. They shall arrive at the fixed time and work up to signing of the Report (Act) on Breakage Investigation.

**3.2.10.** During the period of Commission activity the OAEU Administration is obligated:

- To ensure unimpeded access to the territory of affected OAEU for the Commission members;
- To ensure performance of necessary calculations, testing, photographic works, etc.;
- To provide with designing, engineering, operating and other documents upon request of Commission Chairman;
- To submit the records of registration devices, printings of electronic computer, operative journals, etc.



- To provide printing and copying of investigation materials;
- To render other services related to investigation.

**3.2.11.** The process and results of investigation shall be discussed at the Commission meetings.

Commissions Members disagree with the opinion of others are able to express their Specific Opinion in written form. This Specific Opinion shall be added to the Report (Act) on Breakage Investigation.

**3.2.12.** Investigation period at the basic stage shall not exceed 15 calendar days from the date of signing the Order on arrangement of Commission by the OAEU Administration Head. Upon soliciting of Commission Chairman to the OAEU Administration the period of investigation (especially in difficult cases) might be extended with mentioning the certain period of completion.

**3.2.13.** Administration of OAEU shall provide the representatives of RF Gosatomnadzor (who supervise the investigation process at preliminary and basic stage) with information, communication means, documentation and papers related to investigation as well as to ensure access to the breakage allocation.

**3.2.14.** In case of disturbances have arisen during transportation of RS, Products on the base of RS and RW by motor transport, aircraft, railway, sea and inland water transport out of the OAEU territory the investigation must be done by the consignor of cargo (Organization responsible for the load/cargo) unless otherwise mutually agreed in the Contract between the consignor of cargo and the consignee.

**3.2.15.** Upon receiving the message regarding the disturbance from the Duty Person responsible for transport meaning and (or) from the Chief of Guard, the Consignor of Cargo shall notify the Duty Person of RF Gosatomnadzor, the Duty Person of RF Gosatomnadzor Regional Office, the Utility and other Organizations listed in paragraph 3.1.4, and send corresponding OAEU employees to the place of disturbance occurrence with the aim to identify the Breakage Class.

Upon arrival to the place of occurrence, the OAEU employees shall:

- Define the Breakage Class,
- Lead to preliminary conclusions regarding its causes, and
- Make proposals on procedure of investigation.

Basing on aforementioned proposals the Consignor of Cargo must organize investigation being guided by the present Section of the Document

### **3.3. Accounting for breakages**

**3.3.1.** OAEU Administration shall organize registration (upon the Classes) of all breakages happened while handling with RS, RSu, Products on its basis and with RW. The form of Table entitled as "Accounting for breakages at the Object of Atomic Energy Use" is given in the Appendix 4.

**3.3.2.** The following is the initial data for accounting for breakage:

- Information on breakages to be submitted by the preliminary stage of investigation;
- Investigation Papers to be produced at the basic stage of investigation (Report or Act).

**3.3.3.** The papers of Commission shall be stored at OAEU. Term of its storage shall be agreed upon with Regional Office of RF Gosatomnadzor supervising the OAEU in question. In cases of:

Changing the form of property or the organizational & legal basis;  
Liquidation, re-organization, movement to another territory or termination of activity of OAEU with RS, RSu, Products on its basis and with RW

The papers of Commission shall be passed to the Federal Executive Body in charge with the OAEU in question.

## Numerical values of radiation normative

Table 1

### Values of Equivalent Dose Rate in the Apartments

No	Class of Breakage	Radiation Dose Rate $R$ , mcSv/h	
		At the premises of permanent staying of Group A staff	At the premises of Group B staff staying and at the territory of Buffer Area of the Object
1.	A	$R > 12,0$	$R > 2,4$
2.	P-1	$KU \leq R \leq 12,0$	$0,12 \leq R \leq 2,4$
3.	P-2	$R < KU$	$R < 0,12$

Table 2

### Values of Equipment Radiation Dose Rate

No	Equipment	Breakage Class	Radiation Dose Rate at the distance of 1 m from the surface of Equipment
1.	Mobile, moveable, stationary, defectoscopy, therapy apparatuses and other facilities with radio nuclide sources	A	$>20$ mcGr/h (2 mR/h)
		P-1	$KU \leq R \leq 20$ mcGr/h
		P-2	$R \leq KU$
2.	Radio nuclide devices for usage in working environment	A	$>3$ mcGr/h (0,3 mR/h)
		P-1	$KU \leq R \leq 3$ mcGr/h
		P-2	$R \leq KU$
3.	RW packages	A	$>100$ mcGr/h (10 mR/h)
		P-1	$KU \leq R \leq 100$ mcGr/h
		P-2	$R \leq KU$
4.	Temporary storage facilities for flow-detectors and other devices	A	$>1$ mcGr/h (0,1 mR/h)
		P-1	$KU \leq R \leq 1$ mcGr/h
		P-2	$R \leq KU$

Table 3

Levels of radioactive contamination of transport meaning surface,  
Particle /sq.cm min)

No	Subject of radioactive contamination	Breakage Class	Type of radioactive contamination			
			Removable (non-fixed)		Non-removable (fixed)	
			By alpha-active radio-nuclides	By beta- active radio-nuclides	By alpha-active radio-nuclides	By beta-active radio-nuclides
1.	External surface of shielding container	A	Excluded	Excluded	Not regulated	> 200
		P-1	The same	The same	The same	$KU \leq R \leq 200$
		P-2	>>	>>	>>	$R \leq KU$
2.	External surface of van-container	A	Excluded	Excluded	Not regulated	> 200
		P-1	The same	The same	The same	$KU \leq R \leq 200$
		P-2	>>	>>	>>	$R \leq KU$
3.	Internal surface of shielding container	A	>1	> 100	Not regulated	> 2000
		P-1	$KU \leq R \leq 1$	$KU \leq R \leq 100$	The same	$KU \leq R \leq 2000$
		P-2	$R < KU$	$R < KU$	>>	$R \leq KU$
4.	External surface of transport container	A	>1	> 100	Not regulated	> 2000
		P-1	$KU \leq R \leq 1$	$KU \leq R \leq 100$	The same	$KU \leq R \leq 2000$
		P-2	$R < KU$	$R < KU$	>>	$R \leq KU$

**Table 4**

**Acceptable level of general radioactive contamination of working surfaces:  
Skin (during the shift), Overalls & Individual Protection Means (IPM), part/min sq.cm \***

Subject of general radioactive contamination	By alpha-active nuclides		By beta-active nuclides
	By certain	By others	
Non-damaged skin, special underwear, towels, internal surface of IPM face pars.	2	2	200
Overalls, additional IPM internal surface, external surface of special shoes.	5	20	2000
Surface of Apartments of staff permanent staying and associated equipment	5	20	2000
Surface of Apartments of staff periodical staying and associated equipment	50	200	10 000
External surface of additional IPM to be taken off at the Sanitary Inspection Rooms	50	200	10 000

\* In case of exceeding acceptable level of general radioactive contamination of working surfaces (skin, food, overalls, etc.) the data of Table 4 may be used for initial revealing of radiation breakage with subsequent clarification of Breakage Class upon criteria given in Tables 1,2,3 of Appendix 1, and the Table of general text.

## Typical structure and content of Commission Report on Breakage Investigation at the Object of Atomic Energy Use

### 1. Report shall contain the following structural components:

Cover Sheet.  
Introduction.  
Section 1. Breakage Class.  
Section 2. Initial Events and Trends of Breakage.  
Section 3. Breakage causes and recommendations regarding OAEU safety improvement.  
Sheet of Commission Member Signatures.  
Appendices.

### 2. Cover Sheet is formed as follows:

<p style="margin: 0;">REPORT</p> <p style="margin: 0;">Of Commission on Breakage Investigation</p>		
at	<p style="margin: 0;">_____</p> <p style="margin: 0; text-align: center; font-size: small;">(Name of Object, consignee, etc.)</p>	
happened	<p style="margin: 0;">_____</p> <p style="margin: 0; text-align: center; font-size: small;">(date)</p>	<p style="margin: 0;">_____</p> <p style="margin: 0; text-align: center; font-size: small;">(month)</p>
	<p style="margin: 0;">_____</p> <p style="margin: 0; text-align: right; font-size: small;">year</p>	

### 3. Introduction shall contain:

Name of OAEU, Federal Executive Body; type (kind) and name of RS, RSu, PoS of RS or RW Repository where the Breakage occurred; date and time of breakage.

Brief description of investigation results:

- Information about the Class, Initial Event, Trends and Causes of Breakage;
- Actions of Administration and OAEU staff related to prevention of propagation of breakage or its consequences.

Information related to impact of breakage to the operation of other RS, PoS of RSu or RW Repositories allocated at the OAEU Site.

Composition of Commission, its aims and goals, terms of activity, as well as background for undertaking the investigation (appointed by whom, title, No and date of corresponding Document on Arrangement of Commission).

### 4. Section 1 shall provide with:

List of parameters and characteristics of OAEU systems (components) status.

Dynamic of changes of mentioned parameters & characteristics of OAEU systems (components) status and characteristics of radiation environment at the control points, before and after the breakage, including the status took place after transfer to performing works on prevention of breakage or its consequences.

Radiation dose rate at the place of breakage, meanings of parameters and characteristics of OAEU systems (components) status in case of violation from normal operation.

Breakage Class.

### 5. The Section 2 shall provide with:

Description of Initial Event (failure, external event, human error, error of exterior Organizations);

Breakage trends;

Results of investigation of causes led to deviation of parameters from normal operation limits and conditions and characteristics of OAEU system (component) status, including radiation, as well as including data on radioactive contamination of environment Objects, availability of victims.

**6. Section 3 shall provide with:**

Revealed causes of breakage, recommendations on its elimination and OAEU safety improvement.

**7. Signature Sheet of Commission Members shall be formed as follows:**

Chairman of Commission: _____ (Signature) _____ (Name) _____ 199 (year). (Date, month)
Commission Members:
1. _____ (Post, Name of Organization)
_____ (Signature) _____ (Name)
2. Familiarized with the Report:
_____ (post)
_____ (Signature) _____ (Name)
_____ 199 (year). (date, month)

**8. The Appendices shall contain all necessary documents that confirm conclusions of the Commission:**

- Diagrams of changes in parameters and characteristics of OAEU systems & components status before and after the breakage,
- Printings of main process equipment status parameters changes registration in conditions of work on prevention of breakage or its consequences,
- Data on radiation conditions examination,
- OAEU staff explanatory notes,
- Necessary process diagrams, drawings, outlines, pictures of equipment and damaged places, Protocols & Acts of post-accident examinations, Acts of Opening (Dismantling) of damaged Equipment;
- In case of breakage resulting from Acts of God – inquires of Weather & Seismic Stations, extracts from Design Calculations as well as Conclusions of specialists involved in investigation.

Information about the Equipment failed to operate, damaged or imperfect Equipment:

- Type, mark;
- Works number;
- Factory of origin;
- Date of producing and commissioning;
- Date and type of the last maintenance;
- Results of the last testing and examination;
- Conformity with Regulatory Requirements and Operating Documentation;
- Life length of Equipment from the beginning of operation and from the moment of last fault or defect;
- Brief description of failure, damage, defect of Equipment and its causes;
- Whether or not, and when the same kind of failure, damage, defect of the present or analogical Equipment took place.

Data related to workers committed malfunction that led or might lead to breakage:

- Name, Family name;
- Post, qualification;
- Education, occupation;

- Total record of service with RS, record of service at present post;
- Data on technical & radiation safety instruction, on training;
- Availability of Allowance for Work at especially hazardous conditions.

**TYPICAL FORM OF ACT ON BREAKAGE INVESTIGATION**

ACT  
On breakage Investigation

\_\_\_\_\_ (Name of the Object of Atomic Energy Use)

“ “ \_\_\_\_\_ (year).

\_\_\_\_\_ (Place of Act completion)

1. The Commission appointed

\_\_\_\_\_ (by whom it is appointed, title, date & number of Document on appointment of the Commission)

consisting of:

Chairman: \_\_\_\_\_ (Name, post, place of work)

Commission Members:

\_\_\_\_\_ (Name, post, place of work)

has completed the present Act

\_\_\_\_\_ (Name of the Object of Atomic Energy Use, its allocation, date and time of breakage)

2. Commission has established:

\_\_\_\_\_ (Brief description of breakage and investigation results)

Chairman of Commission \_\_\_\_\_ (signature) \_\_\_\_\_ (Name)

Commission Members: \_\_\_\_\_ (Signature) \_\_\_\_\_ (Name.)



Form of Table "Accounting for breakages at the Object of Atomic Energy Use"

No	Name of OAEU, RS, Equipment with Rsu & RW, transport meaning	Breakage Class	By whom and where the information about the breakage was passed, Date & time of breakage, Post & name of person provided the information	Content and character of breakage	Measures taken during investigation of breakage	Conclusions & proposals with regard to prevention of breakage	Measures taken to mitigate consequences of breakage
1	Radiation Accident						
1.1							
1.2							
....							
n							
2	Radiation Event						
2.1							
2.2							
....							
n							
3	Non-radiation Event						
3.1							
3.2							
....							
n							